



# PATH 2 PASS

THE BCBA EXAM  
6<sup>th</sup> EDITION STUDY GUIDE



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BACB 6th Edition Task List  
BCBA Exam Study Manual

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Path 4 ABA  
*Your Path to Successes*



The following content contains all of the information relevant to the BACB 6th Edition Task List, Applied Assignments and Quizzes to prepare you to pass the Board Exam. None of the content is affiliated with the BACB, but is rather a compilation of the readings, research articles and other sources listed in the appendix.

Authors Note:

All content was derived from numerous sources cited in the appendix. None of the content in this manual is original content, but the study manual was created and arranged by Board Certified Psychologists & Behavior Analysts with over 40-years' experience combined in the field of Applied Behavior Analysis.

**Path 2 Pass: The BCBA Exam 6th Edition Study Manual**

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While this manual includes information from publicly available sources and established ABA concepts, the authors have compiled and presented the material in a unique, educational format. No content may be reproduced or resold without permission.

This manual was written to support future behavior analysts in their journey toward certification. Deep appreciation goes to all the educators, supervisors, and students who continue to advance the field of applied behavior analysis.

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Jason teamed up with Dr. Michael Comiskey to form Path 4 ABA, PLLC to demystify ABA and share his passion for education in this field with the rest of the world.

## Introduction

Welcome to your journey to becoming a Board Certified Behavior Analyst (BCBA)! This study manual is your guide to mastering the 6th Edition BACB Task List, the foundation for your preparation for the BCBA examination.

Rooted in the science of behavior analysis, the 6th Edition Task List outlines the knowledge, skills, and principles essential for effective and ethical practice. Whether you're a seasoned professional or new to the field, this manual will help you understand and apply key concepts with clarity and confidence.

Prepare to dive into topics that will sharpen your ability to describe, predict, and influence behavior in meaningful ways. With dedication and focus, this resource will help you build the expertise needed to make a lasting impact on the individuals and communities you serve.

Let's get started—your success begins here!

## BCBA Task List (6th ed.)

This Task List includes the knowledge and skills that serve as the foundation for the BCBA examination.

### Section 1: Foundations

#### A. Behaviorism & Philosophical Underpinnings

A-1) Identify the goals of behavior analysis as a science (i.e., description, prediction, control).

A-2) Explain the philosophical assumptions underlying the science of behavior analysis (e.g., selectionism, determinism, empiricism, parsimony, pragmatism).

A-3) Explain behavior from the perspective of radical behaviorism.

A-4) Distinguish between behaviorism, the experimental analysis of behavior, applied behavior analysis, and professional practice guided by the science of behavior analysis.

A-5) Describe and define the dimensions of applied behavior analysis (Baer, Wolf, & Risley, 1968).

#### B. Concepts and Principles

- B-1) Identify and distinguish among behavior, response, and response class.
- B-2) Identify and distinguish among stimulus and stimulus class.
- B-3) Identify and distinguish among respondent and operant conditioning.
- B-4) Identify and distinguish among positive and negative reinforcement contingencies.
- B-5) Identify and distinguish among positive and negative punishment contingencies.
- B-6) Identify and distinguish among automatic and socially mediated contingencies.
- B-7) Identify and distinguish between unconditioned, conditioned, and generalized reinforcers and punishers.
- B-8) Identify and distinguish among unconditioned, conditioned, and generalized reinforcers and punishers.
- B-9) Identify and distinguish among simple schedules of reinforcement.
- B-10) Identify and distinguish among concurrent, multiple, mixed, and chained schedules of reinforcement
- B-11) Identify and distinguish among operant and respondent extinction as operations and processes.
- B-12) Identify examples of stimulus control.
- B-13) Identify examples of stimulus discrimination.
- B-14) Identify and distinguish between stimulus and response generalization.
- B-15) Identify examples of response maintenance.
- B-16) Identify examples of motivating operations.
- B-17) Distinguish between motivating operations and stimulus control.
- B-18) Identify and distinguish between rule-governed and contingency-shaped behavior.
- B-19) Identify and distinguish among verbal operants.
- B-20) Identify the role of multiple control in verbal behavior.
- B-21) Identify examples of processes that promote emergent relations and generative performance.
- B-22) Identify ways behavioral momentum can be used to understand response persistence.
- B-23) Identify ways the matching law can be used to interpret response allocation.

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B-24) Identify and distinguish between imitation and observational learning.

### C. Measurement, Data Display, and Interpretation

C.1. Create operational definitions of behavior.

C.2. Distinguish among direct, indirect, and product measures of behavior. C.3. Measure occurrence.

C.4. Measure temporal dimensions of behavior (e.g., duration, latency, inter-response time).

C.5. Distinguish between continuous and discontinuous measurement procedures.

C.6. Design and apply discontinuous measurement procedures (e.g., interval recording, time sampling).

C.7. Measure efficiency (e.g., trials to criterion, cost-benefit analysis, training duration).

C.8. Evaluate the validity and reliability of measurement procedures.

C.9. Select a measurement procedure to obtain representative data that accounts for the critical dimension of the behavior and environmental constraints.

C.10. Graph data to communicate relevant quantitative relations (e.g., equal-interval graphs, bar graphs, cumulative records).

C.11. Interpret graphed data.

C.12. Select a measurement procedure to obtain representative procedural integrity data that accounts for relevant dimensions (e.g., accuracy, dosage) and environmental constraints.

### D. Experimental Design

D.1. Create operational definitions of behavior.

D.2. Distinguish among direct, indirect, and product measures of behavior.

D.3. Measure occurrence.

D.4. Measure temporal dimensions of behavior (e.g., duration, latency, inter-response time).

D.5. Distinguish between continuous and discontinuous measurement procedures.

- D.6. Design and apply discontinuous measurement procedures (e.g., interval recording, time sampling).
- D.7. Measure efficiency (e.g., trials to criterion, cost-benefit analysis, training duration).
- D.8. Evaluate the validity and reliability of measurement procedures.
- D.9. Select a measurement procedure to obtain representative data that accounts for the critical dimension of the behavior and environmental constraints.
- D.10. Graph data to communicate relevant quantitative relations (e.g., equal-interval graphs, bar graphs, cumulative records).
- D.11. Interpret graphed data. C.12. Select a measurement procedure to obtain representative procedural integrity data that accounts for relevant dimensions (e.g., accuracy, dosage) and environmental constraints.

## **Section 2: Applications**

### E. Ethical and Professional Issues

- E.1. Identify and apply core principles underlying the ethics codes for BACB certificants (e.g., benefit others; treat others with compassion, dignity, and respect; behave with integrity).
- E.2. Identify the risks to oneself, others, and the profession as a result of engaging in unethical behavior.
- E.3. Develop and maintain competence by engaging in professional development activities (e.g., read literature, seek consultation, establish mentors).
- E.4. Identify and comply with requirements for collecting, using, protecting, and disclosing confidential information.
- E.5. Identify and comply with requirements for making public statements about professional activities (e.g., social media activity; misrepresentation of professional credentials, behavior analysis, and service outcomes).
- E.6. Identify the conditions under which services or supervision should be discontinued and apply steps that should be taken when transitioning clients and supervisees to another professional.
- E.7. Identify types of and risks associated with multiple relationships, and how to mitigate those risks when they are unavoidable.

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E.8. Identify and apply interpersonal and other skills (e.g., accepting feedback, listening actively, seeking input, collaborating) to establish and maintain professional relationships.

E.9. Engage in cultural humility in service delivery and professional relationships.

E.10. Apply culturally responsive and inclusive service and supervision activities.

E.11. Identify personal biases and how they might interfere with professional activity.

E.12. Identify and apply the legal, regulatory, and practice requirements (e.g., licensure, jurisprudence, funding, certification) relevant to the delivery of behavior analytic services.

### F. Behavior Assessment

F.1. Identify relevant sources of information in records (e.g., educational, medical, historical) at the outset of the case.

F.2. Identify and integrate relevant cultural variables in the assessment process.

F.3. Design and evaluate assessments of relevant skill strengths and areas of need.

F.4. Design and evaluate preference assessments.

F.5. Design and evaluate descriptive assessments.

F.6. Design and evaluate functional analyses.

F.7. Interpret assessment data to determine the need for behavior-analytic services and/or referral to others.

F.8. Interpret assessment data to identify and prioritize socially significant, client-informed, and culturally responsive behavior-change procedures and goals.

### G. Behavior-Change Procedures

G.1. Design and evaluate positive and negative reinforcement procedures. G.2. Design and evaluate differential reinforcement (e.g., DRA, DRO, DRL, DRH) procedures with and without extinction.

G.3. Design and evaluate time-based reinforcement (e.g., fixed time) schedules.

G.4. Identify procedures to establish and use conditioned reinforcers (e.g., token economies).

- G.5. Incorporate motivating operations and discriminative stimuli into behavior-change procedures.
- G.6. Design and evaluate procedures to produce simple and conditional discriminations.
- G.7. Select and evaluate stimulus and response prompting procedures (e.g., errorless, most-to-least, least-to-most).
- G.8. Design and implement procedures to fade stimulus and response prompts (e.g., prompt delay, stimulus fading).
- G.9. Design and evaluate modeling procedures.
- G.10. Design and evaluate instructions and rules.
- G.11. Shape dimensions of behavior.
- G.12. Select and implement chaining procedures.
- G.13. Design and evaluate trial-based and free operant procedures.
- G.14. Design and evaluate group contingencies.
- G.15. Design and evaluate procedures to promote stimulus and response generalization.
- G.16. Design and evaluate procedures to maintain desired behavior change following intervention (e.g., schedule thinning, transferring to naturally occurring reinforcers).
- G.17. Design and evaluate positive and negative punishment (e.g., time-out, response cost, overcorrection).
- G.18. Evaluate emotional and elicited effects of behavior change procedures. G.19. Design and evaluate procedures to promote emergent relations and generative performance.

## H. Selecting and Implementing Interventions

- H.1. Develop intervention goals in observable and measurable terms.
- H.2. Identify and recommend interventions based on assessment results, scientific evidence, client preferences, and contextual fit (e.g., expertise required for implementation, cultural variables, environmental resources). H.3. Select socially valid alternative behavior to be established or increased when a target behavior is to be decreased.
- H.4. Plan for and attempt to mitigate possible unwanted effects when using reinforcement, extinction, and punishment procedures.

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H.5. Plan for and attempt to mitigate possible relapse of the target behavior. H.6. Make data-based decisions about procedural integrity.

H.7. Make data-based decisions about the effectiveness of the intervention and the need for modification.

H.8. Collaborate with others to support and enhance client services.

### I. Personnel Supervision and Management

I.1. Identify the benefits of using behavior-analytic supervision (e.g., improved client outcomes, improved staff performance and retention).

I.2. Identify and apply strategies for establishing effective supervisory relationships (e.g., executing supervisor supervisee contracts, establishing clear expectations, giving and accepting feedback).

I.3. Identify and implement methods that promote equity in supervision practices.

I.4. Select supervision goals based on an assessment of the supervisee's skills, cultural variables, and the environment.

I.5. Identify and apply empirically validated and culturally responsive performance management procedures (e.g., modeling, practice, feedback, reinforcement, task clarification, manipulation of response effort).

I.6. Apply a function-based approach (e.g., performance diagnostics) to assess and improve supervisee behavior.

I.7. Make data-based decisions about the efficacy of supervisory practices.

## Section 1 of the Study Manual.

### A. Philosophical Underpinnings

A.1. Identify the goals of behavior analysis as a science (i.e.,
description, prediction, control).
A.2. Explain the philosophical assumptions underlying the
science of behavior analysis (e.g., selectionism, determinism,
empiricism, parsimony, pragmatism).
A.3. Explain behavior from the perspective of radical behaviorism.
A.4. Distinguish among behaviorism, the experimental analysis of
behavior, applied behavior analysis, and professional practice
guided by the science of behavior analysis.
A.5. Identify and describe dimensions of applied behavior analysis.

#### **A-1) Identify the goals of behavior analysis as a science (i.e., description, prediction, control).**

Introduction:

Behavior analysis is a scientific approach that focuses on understanding and modifying behavior through observation and experimentation. It aims to describe, predict, and control behavior effectively. In this lesson, we will explore the three main goals of behavior analysis and understand how they contribute to our understanding of behavior.



**I. Description:**

The first goal of behavior analysis is to describe behavior accurately and objectively. This involves identifying and defining the behavior of interest in a clear and measurable manner. By describing behavior, researchers and practitioners can establish a common language to discuss and study behavior. Descriptive statements should be precise, observable, and free from interpretation. Describing behavior helps to establish a foundation for scientific inquiry and provides a baseline for further analysis.

**II. Prediction:**

The second goal of behavior analysis is to predict behavior reliably. Through careful observation and data collection, behavior analysts seek to identify patterns and relationships between variables that influence behavior. By understanding these relationships, behavior analysts can make accurate predictions about how behavior will change under different conditions. Prediction allows us to anticipate behavior and develop effective interventions and strategies to promote positive change.

**III. Control:**

The third goal of behavior analysis is to exert control over behavior. Control refers to the ability to manipulate variables to produce desired changes in behavior. By understanding the functional relationships between behavior and its controlling variables, behavior analysts can develop

interventions that effectively modify behavior. Behavior change procedures are based on scientific principles and are systematically implemented and evaluated. Control over behavior helps individuals achieve their goals, improve their quality of life, and promote positive social outcomes.

**Questions for Reflection:**

1. Why is it important to describe behavior accurately and objectively?
2. How does prediction contribute to the effectiveness of behavior analysis interventions?
3. What does it mean to exert control over behavior, and why is it a crucial goal of behavior analysis?
4. Can you think of an example where behavior analysis could be applied to improve a specific behavior or situation?

**Conclusion:**

Behavior analysis, as a science, aims to describe, predict, and control behavior. By accurately describing behavior, behavior analysts establish a foundation for scientific inquiry. Through prediction, they can anticipate behavior and develop effective interventions. Finally, by exerting control over behavior, behavior analysts can modify behavior to achieve desired outcomes. Understanding these goals helps us appreciate the scientific rigor and practical applications of behavior analysis in various settings.

**A-2) Explain the philosophical assumptions underlying the science of behavior analysis (e.g., selectionism, determinism, empiricism, parsimony, pragmatism).**

The philosophical assumptions underlying the science of behavior analysis are based on seven core principles: selectionism, determinism, empiricism, parsimony, pragmatism, philosophical doubt and experimentation. These principles provide a framework for understanding behavior and guiding scientific inquiry in behavior analysis.

**1. Selectionism:** This principle suggests that behavior evolves and is selected based on its consequences. It recognizes that behaviors that are reinforced or rewarded are more likely to occur in the future, while behaviors that are punished or not reinforced are less likely to be repeated.

*The origin of selectionism: (Grey content is a biological perspective on how operant conditioning and respondent conditioning aiding in evolution of human behavior.*

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Selection is found in both Darwin's explanation of the origin and the extinction of species as well as in behavior analysis. The idea of selection, or selectionism, is part of B.F. Skinner's explanation for the origin and extinction of behavior (Tryon, 2002).

Selectionism is a theory that all forms of life naturally and continually evolve as a result of the interaction between function and the survival value of that function. Operant selection by consequences is the conceptual and empirical foundation of behavior analysis.

Selectionism is an important concept in applied behavior analysis. It provides explanation for how people as individuals and people as groups change over time.

There are three primary ways that the environment can affect living things through selectionism.

**Phylogenetic selectionism:**

Addresses how the natural evolution of a species occurs particularly in ways that are based on contingencies necessary for survival of the species. This is basically the concept of Darwinism, which is about how a species changes over time through small modifications that help the species to survive. Phylogenics is about how a group of organisms evolves over time.

**Ontogenic selectionism:**

is about the development of an organism based on individual experiences with contingencies that result in punishment or reinforcement. In contrast to how phylogenics refers to the development of a group, ontogenics is about the development of an individual.

Cultural selectionism involves the transference of behaviors from one member to another within a group of individuals. This typically happens through learning principles such as imitation and modeling.

Questions:

- a. How does selectionism explain the process of learning new behaviors?
- b. Can you provide an example of how selectionism operates in everyday life?

**2. Determinism:** Behavior analysis operates under the assumption that behavior is determined by environmental factors and is predictable. It suggests that behavior is not random but can be explained by identifying the variables that influence it.

Similar to:

**Lawfulness:** The lawfulness of behavior in Applied Behavior Analysis (ABA) is the idea that all behavior is predictable and caused by external events. This means that behavior is not random or accidental.

VS.

**Free Will** is the freedom of humans to make choices that are not determined by prior causes, which is an opposing view point.

Questions:

- a. How does determinism differ from the concept of free will?
- b. Can you explain how understanding determinism can be helpful in behavior change interventions?

**3. Empiricism:** This principle emphasizes the importance of gathering evidence through direct observation and measurement. It promotes the use of objective and measurable data to guide scientific inquiry and to evaluate the effectiveness of interventions.

“When you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind”.

Questions:

- a. Why is empiricism considered a fundamental aspect of behavior analysis?
- b. How does empiricism help researchers and practitioners make informed decisions?

**4. Parsimony:** Parsimony refers to the principle of simplicity. It suggests that the simplest explanation that accounts for the observed behavior should be preferred.

Questions:

- a. Why is parsimony important in behavior analysis?
- b. How does parsimony help avoid unnecessary complexity in understanding and explaining behavior?

**5. Pragmatism:** Pragmatism emphasizes the practical application of scientific knowledge to solve real-world problems. It focuses on the effectiveness and usefulness of interventions in achieving desired outcomes. Questions:

- a. How does pragmatism guide behavior analysts in developing interventions?

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b. Can you provide an example of how pragmatism is applied in behavior analysis?

**6. Philosophic Doubt:** This principle encourages behavior analysts to question and critically evaluate the assumptions, strategies, and outcomes of their work. It promotes an ongoing process of self-reflection and improvement.

### Questions:

a. How does philosophic doubt contribute to the advancement of behavior analysis as a science?

b. What are some ways in which behavior analysts can incorporate philosophic doubt into their practice?

**7. Experimentation:** This is a carefully conducted comparison of some measure of the subject matter of interest (the dependent variable) under two or more different conditions in which only one factor at a time (independent variable) differs from one condition to another. Here, we are trying to demonstrate that the independent variable is the cause for the change in the dependent variable. All experimental designs are created to rule out confounding variables, so that we can attribute the change in the dependent variable as a result of the independent variable.

### Questions:

a. Is correlation the same as causation? If not, what is the difference?

B. What are some examples of confounding variables that could interfere with data? Can you think of some?

C. What ways can we rule out confounding variables when we collect data?

### **A-3) Describe and explain behavior from the perspective of radical behaviorism.**

**In this section we will explain the different forms of behaviorism and how to differentiate them from each other, their founders and mentalism**

Radical Behaviorism was founded by BF Skinner. He was also the founders of operant conditioning and also the book “Verbal Behavior” where he postulates the verbal operants: Mand, Tact, Echoic, etc. we will discuss his latter contributions later in the book.

Burrhus Frederick Skinner (1904-1990) AKA B.F. Skinner



Although we are starting with a discussion about BF Skinner due to radical behaviorism. He was not the founder of Behaviorism and many other scientists made contributions.

**Radical Behaviorism:**

Seeks to understand behavior in all its forms, including “private events” which include inner thoughts and feelings

- Radical behaviorism suggests that private events can be named by the individual experiencing them
- Also suggests that individuals can be taught to name their private events
- Encourages those studying and practicing radical behaviorism to acknowledge the mental health component of the

individuals we are working with

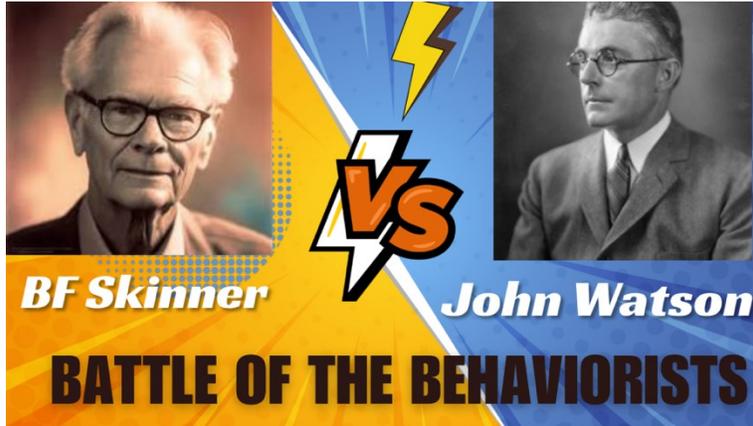
Behavior is everything that we do.

Radical, in this case, means “whole or all-encompassing” -includes not only our outward behaviors but our thoughts, feelings,

emotions, etc.

Feelings, emotions, and thoughts should be able to be explained.

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### Methodological Behaviorism:

1913: Watson was the first to describe Behaviorism as a formal system and was born in 1878



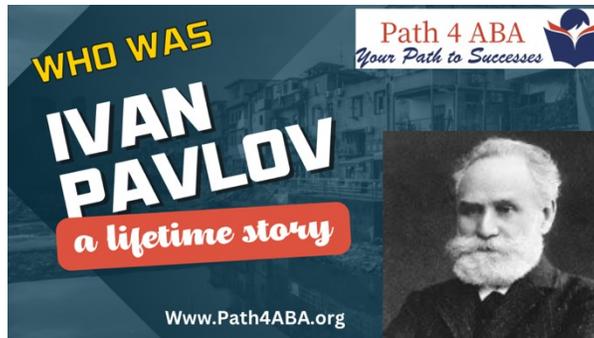
Methodological Behaviorism: Only looks at observable events in their Analysis of Behavior. Watson did not incorporate any private (internal events/diagnosis/conditions, etc.)

He was only concerned with Stimulus and Response relationship (S -> R)

1920: Little Albert experiment: This is the famous study where they paired white rats with a loud aversive noise. Thus, creating an association and over-generalization, leaving the child afraid of fluffy white animals/objects.

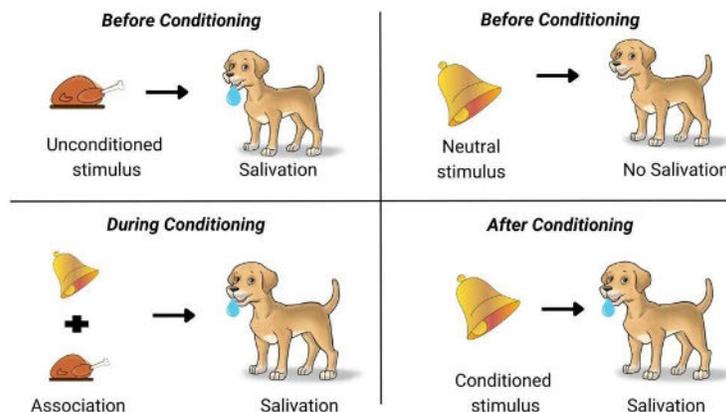
### Classical Conditioning: Also referred to as respondent and Pavlovian Conditioning

**Ivan Pavlov (1849-1936)**



Classical conditioning: Famous for his experiment with a dog where he developed the concepts of Unconditioned Stimuli (Smell of meat), Unconditioned Response (salivation). Then through pairing the ringing of a bell with the meat, the bell would then create salivation without the meat (after multiple pairing sessions). Then the ringing of the bell is referred to as the conditioned stimulus, and the salivation following the ringing of the bell is the conditioned response.

- 1) Meat (US unconditioned Stimulus),
- 2) Salivation to meat (Unconditioned response), Ringing of Bell (conditioned stimulus), Salivation to the bell (Conditioned Response)
- 3) An Arbitrary Bell (Neutral Stimulus is introduced and paired with the unconditioned stimulus
- 4) Bell and Meat are conditioned so the arbitrary bell begins resulting the unconditioned response salivation but now it's the trained or conditioned response



This process came to be known as Respondent Conditioning. For memory think "R" for reverse

Methodological Events: John B. Watson is the father of behaviorism and specifically methodological behaviorism and attempts to explain all phenomena based on overt/environmental occurrences and does not take into account any internal emotions/thoughts, etc.

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### Four Questions about Radical Behaviorism:

1. How does radical behaviorism differ from other psychological approaches that emphasize internal mental processes?

- Radical behaviorism rejects mentalistic explanations and focuses solely on observable behavior and its environmental determinants. How does this perspective affect our understanding of behavior?

2. What are the key concepts of radical behaviorism, and how do they shape our understanding of behavior?

- Explore concepts such as antecedents, consequences, reinforcement, punishment, and the functional relationship between behavior and its controlling variables.

3. How does radical behaviorism explain complex human behaviors, such as language acquisition or problem-solving?

- Traditional behaviorism has been criticized for its inability to account for complex cognitive processes. How does radical behaviorism address these concerns and provide an explanation for complex behaviors?

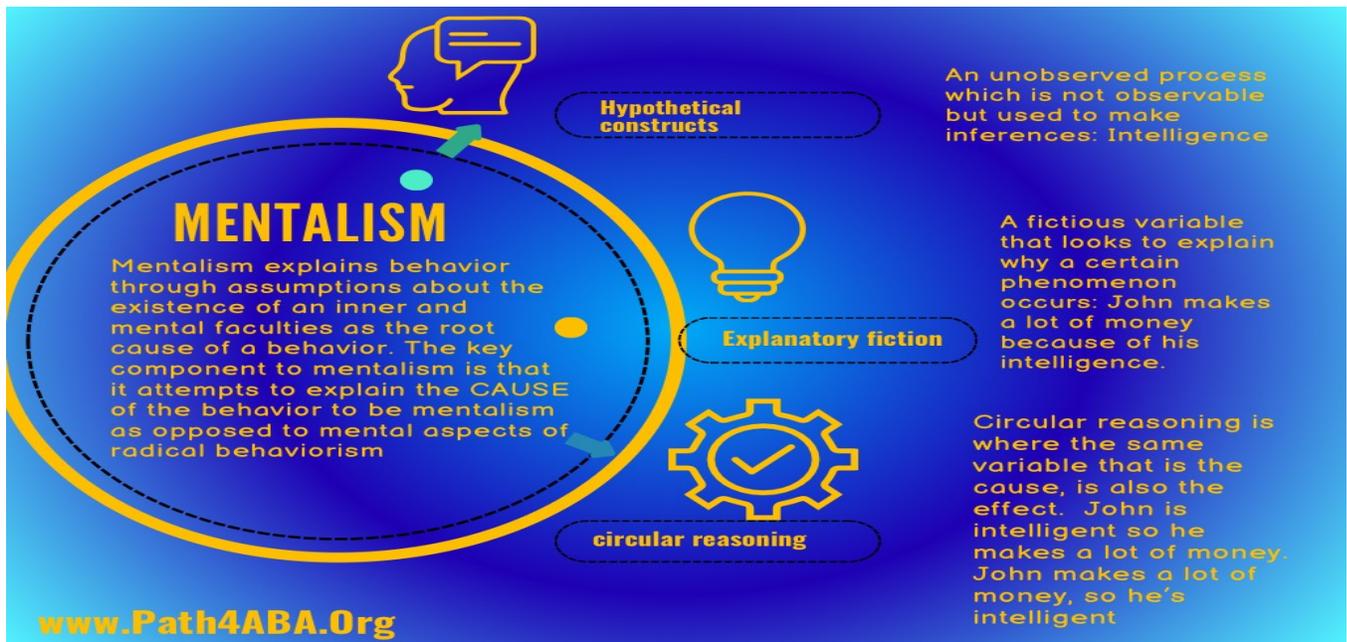
4. How can the principles of radical behaviorism be applied in practical settings, such as education, therapy, or organizational management?

- Examine how the understanding of behavior from a radical behaviorist perspective can inform interventions and strategies in various applied settings.

By exploring these questions, we can deepen our understanding of radical behaviorism and its implications for understanding and modifying behavior.

### Mentalism

Mentalism explains behavior through assumptions about the existence of inner and mental faculties as the root cause of behavior. The key component to mentalism is that it attempts to explain the cause of behavior through assumption-based concepts, as opposed to the concepts of private events which are outlined in radical behaviorism.



### Forms of mentalism

**Hypothetical construct:** This is a theory based on an unobserved process of thought containing various conceptual elements, typically they are subjective and not based on empirical evidence. Examples of this are free-will, self-esteem, pride, dedication, and intelligence. Each of these concepts could be used as causes of behavior, but we would be relying on hypothetical constructs to explain the behavior.

Example: Intuition, Courage, Intelligence, etc.

**Explanatory fiction:** This is a fictitious or hypothetical variable that often takes the form of another name for the observed phenomenon it claims to explain. It contributes nothing to functional relationships. Terms such as “intelligence” or “cognitive awareness” are explanations for behavior that are not observable and measurable. For example, an explanation of "the use of intelligence led to..." does not assist in the "why" an organism pushes the lever when the light is on and food is available but does not push the lever when the light is off and no food is available.

Example: Zoe gets great grades on her assignments at school because she's so intelligent.

**Circular reasoning:** This concept uses the effect of behavior to explain the cause, but also uses the cause of the behavior to explain the effect. For example: he is smart because he did the behavior. He did the behavior because he is smart.

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Example: John is a good man because he follows his intuition. I can tell John follows his intuition because he is a good man.

Radical Behaviorism vs Mentalism: Due to Skinner considering internal covert events, we need to know what differentiates this form of behavior to mentalism

Radical Behaviorism and Mentalism are two contrasting viewpoints within the field of psychology, especially about the nature of behavior and its causes. However, due to Skinner's inclusion of thoughts and feelings there can be some confusion which one it actually is when compared.

1. Radical Behaviorism, Proposed by B.F. Skinner, Radical Behaviorism is an approach that emphasizes the role of environmental factors in shaping behavior. It posits that all actions and behaviors are a result of conditioning and reinforcement from the environment. Radical Behaviorists believe in the observability of behavior and often rely on empirical methods to study it. They do consider internal events, such as thoughts and feelings, but view these as behaviors themselves that are subject to the same environmental influences as any other behavior.

2. Mentalism: Mentalism, on the other hand, asserts that behavior is the result of internal, mental states and processes. Mentalists believe that thoughts, feelings, beliefs, intentions, and other internal states cause behavior. Their focus is more on the 'mind' and less on observable behavior.

To distinguish between the two, consider the following:

- Is the explanation for behavior derived primarily from observable environmental factors or from inferred internal states?
- Is the behavior explained in terms of conditioning and reinforcement (indicative of Radical Behaviorism) or in terms of thoughts, intentions, and feelings (indicative of Mentalism)?
- Does the explanation rely on empirical data (more typical of Radical Behaviorism) or on introspective or anecdotal evidence (often found in Mentalism)?

### **A-4) Distinguish among behaviorism, the experimental analysis of behavior, applied behavior analysis, and professional practice guided by the science of behavior analysis.**

Let's clarify the differences between behaviorism, the experimental analysis of behavior, applied behavior analysis (ABA), and professional practice guided by behavior analysis:

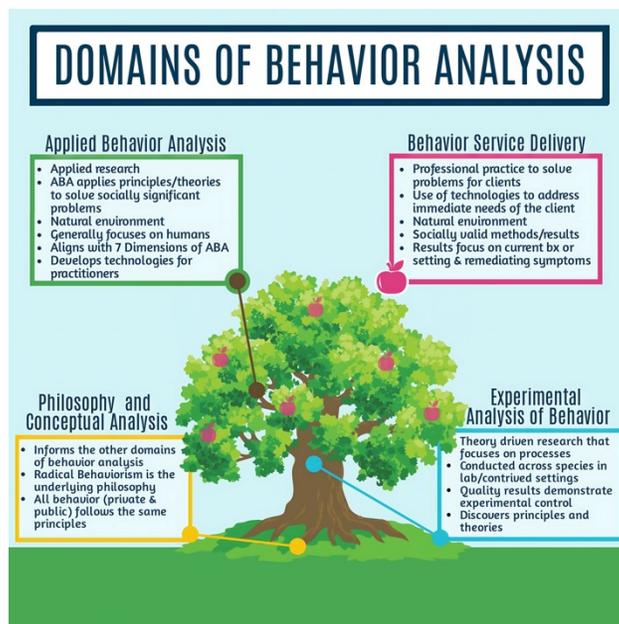
1. Behaviorism: Behaviorism is a psychological theory that focuses on observable behavior rather than internal mental processes. It suggests that behavior can be explained by environmental factors, such as rewards and punishments, and that learning occurs through conditioning.

Behaviorism is a broad theoretical framework that encompasses various approaches to understanding behavior. It looks at historical, methodological, theoretical, and philosophical perspectives/issues.

2. **Experimental Analysis of Behavior:** The experimental analysis of behavior is a scientific approach within behaviorism that focuses on studying behavior in controlled laboratory settings. It involves conducting experiments to analyze the relationship between environmental events (stimuli) and the subsequent behavior they produce. This field aims to identify fundamental principles of behavior and understand the mechanisms that govern behavior.

3. **Applied Behavior Analysis (ABA):** Applied Behavior Analysis is a specific field within behavior analysis that applies the principles and techniques derived from the experimental analysis of behavior to address socially relevant problems. ABA focuses on changing behavior to improve quality of life and increase adaptive skills. It is often used in areas such as autism treatment, education, behavioral therapy, and organizational management. Behavior Analysts assess, monitor, analyze, revise as necessary, communicate, teach, maintain, and encourage generalization.

4. **Professional Practice Guided by Behavior Analysis:** This refers to the application of behavior analysis principles and strategies in various professional settings. Professionals, such as behavior analysts, therapists, educators, and managers, use evidence-based techniques derived from behavior analysis to design interventions, assess behavior, and facilitate behavior change. Professional practice guided by behavior analysis ensures that interventions are based on solid scientific principles and data-driven decision-making



## THE BCBA EXAM STUDY GUIDE

### **Here are five questions on this topic:**

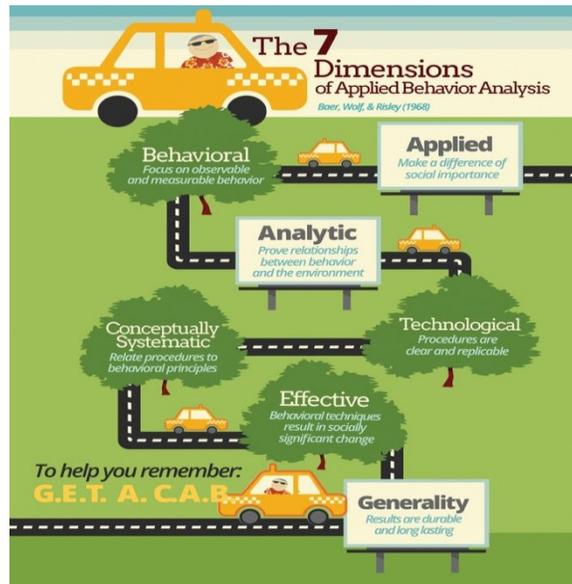
1. What is behaviorism, and how does it differ from the experimental analysis of behavior?
2. What is the main focus of applied behavior analysis (ABA), and how does it relate to behaviorism and the experimental analysis of behavior?
3. How does behavior analysis inform professional practice in fields such as education, therapy, and organizational management?
4. What are some key principles and techniques used in applied behavior analysis to understand and modify behavior?
5. Can you provide examples of how behavior analysis has been applied to address specific behavioral challenges or improve outcomes in different settings.

### **A-5) Describe and define the dimensions of applied behavior analysis (Baer, Wolf, & Risley, 1968).**

#### Applied Behavior Analysis Definition:

Applied behavior analysis (ABA) is “the science in which tactics derived from the principles of behavior are applied to improve socially significant behavior and experimentation is used to identify the variables responsible for the improvement in behavior” (Cooper, Heron, & Heward, 2007, p. 690).

Applied Behavior Analysis (ABA), encompasses several key components and principles. Here are seven essential components or principles of ABA: Acronym: GET A CAB



1. Generalizable: ABA seeks to promote behavior change that occurs across different environments, settings, and individuals. The skills and behaviors targeted for change should generalize to various situations and be maintained over time.
2. Effective: ABA aims to produce meaningful and significant behavior change that improves the individual's quality of life. Interventions are evaluated based on their effectiveness in achieving desired outcomes.
3. Technological: ABA emphasizes the use of precise and detailed descriptions of procedures and interventions. This allows for replication and clear communication of strategies across different settings and practitioners.
4. Applied: ABA seeks to address socially significant behaviors that have practical importance and relevance to the individual and their environment. The interventions and strategies employed in ABA are designed to bring about meaningful improvements in daily functioning and quality of life. This can be applied in various settings and situations, including vocational, social, academic, and self-care.
5. Conceptually Systematic: ABA is based on the principles of behavior analysis, which are derived from experimental research. These principles provide a conceptual framework for understanding behavior and developing effective interventions. ABA interventions are guided by these principles to ensure scientific rigor and effectiveness.

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6. Analytical: In the context of Applied Behavior Analysis (ABA), plays a crucial role in ensuring the effectiveness and scientific rigor of the therapy. This dimension involves two key components: data collection and analysis and experimental design.

7. Behavioral: ABA emphasizes the study and analysis of behavior, including language, that is observable, measurable, and can be targeted for change. This includes identifying specific behaviors of interest and defining them in a clear and objective manner.

While these seven components are not officially designated as "dimensions" of ABA, they represent key aspects of the field and its approach to understanding and modifying behavior.

In Applied Behavior Analysis (ABA), the terms "subject" and "observer" have specific roles:

1. Subject: Often referred to as the "participant," this is the individual whose behavior is being studied or modified. In many ABA contexts, particularly those involving educational or therapeutic settings, this might be a person who is receiving behavior intervention services. The focus is on understanding and influencing the subject's behavior to achieve desirable outcomes, such as improved communication or social skills.

2. Observer: The observer is the person who watches and records the subject's behavior. This role is crucial in ABA as it involves collecting accurate and objective data on the subject's behavior to assess patterns and determine the effectiveness of interventions. Observers are typically trained to minimize bias and to ensure that the data collected is reliable and valid.

Both roles are integral to the research and application of ABA, as they allow for systematic observation, analysis, and modification of behavior.

Here are some questions about ABA:

1. How does ABA identify and define target behaviors for intervention?
2. What are some examples of environmental factors that can influence behavior, and how does ABA address them?
3. How does ABA determine the function of behavior, and why is this important for intervention?
4. Can you explain the role of data collection and analysis in ABA, and how it informs decision-making?
5. How does ABA ensure that interventions are individualized and responsive to the unique needs of each person?

**Here's a 20-question quiz based on the selected sections from the 6th edition BACB Task List:**

Section A.1 - Goals of Behavior Analysis as a Science

**1. What are the three primary goals of behavior analysis as a science?**

- a. Observation, explanation, intervention
- b. Description, prediction, control
- c. Hypothesis, experimentation, analysis
- d. Assessment, intervention, evaluation

**2. Which goal of behavior analysis involves identifying patterns in behavior across time?**

- a. Prediction
- b. Control
- c. Description
- d. Observation

**3. True or False: The goal of control in behavior analysis is to manipulate behavior in unethical ways.**

**4. Which of the following best describes the goal of description in behavior analysis?**

- a. Developing functional relations
- b. Systematically observing and documenting behavior
- c. Making accurate predictions about future behavior
- d. Intervening to change a behavior

**5. Which goal of behavior analysis involves establishing functional relationships between behavior and its controlling variables?**

- a. Control
- b. Observation
- c. Prediction
- d. Description

**6. What philosophical assumption states that all events, including behavior, have causes that can be understood?**

- a. Determinism
- b. Selectionism
- c. Parsimony
- d. Pragmatism

**7. Which assumption emphasizes choosing the simplest explanation for behavior when multiple explanations are available?**

- a. Selectionism
- b. Empiricism
- c. Parsimony
- d. Pragmatism

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**8. The idea that behavior evolves and persists due to its consequences is best captured by which philosophical assumption?**

- a. Determinism
- b. Selectionism
- c. Empiricism
- d. Pragmatism

**9. Which assumption underlies the scientific method by focusing on objective observation and measurement of phenomena?**

- a. Empiricism
- b. Determinism
- c. Parsimony
- d. Pragmatism

**10. Pragmatism in behavior analysis refers to:**

- a. Selecting the simplest explanation
- b. Observing measurable phenomena
- c. Assessing the practical utility of behavior change procedures
- d. Exploring the evolutionary history of behavior

**11. Radical behaviorism differs from methodological behaviorism because it includes:**

- a. Thoughts and feelings as behaviors
- b. A focus on observable behavior only
- c. Less emphasis on empiricism
- d. The use of non-scientific explanations

**12. True or False: Radical behaviorism rejects the study of private events.**

**13. From the perspective of radical behaviorism, private events such as thoughts and emotions are:**

- a. Unobservable and irrelevant
- b. Internal causes of behavior
- c. Subject to the same principles as observable behavior
- d. Outside the scope of scientific inquiry

**14. Radical behaviorism explains behavior as a result of:**

- a. Internal mental processes
- b. Interactions between individuals and their environment
- c. Genetic predispositions only
- d. Random chance

**15. Which of the following is NOT consistent with radical behaviorism?**

- a. Behavior is influenced by reinforcement histories
- b. Private events are not behavior
- c. Environmental variables impact behavior
- d. All behavior is lawful

**16. Behaviorism is best described as:**

- a. The application of behavior principles in clinical practice

- b. The philosophy and theory underlying the science of behavior
- c. The experimental analysis of behavior in laboratory settings
- d. Professional practice guided by behavior analysis

**17. What distinguishes applied behavior analysis (ABA) from the experimental analysis of behavior (EAB)?**

- a. ABA focuses on socially significant behavior change
- b. EAB is more applied in natural settings
- c. ABA relies solely on theoretical research
- d. EAB is concerned with ethical practices

**18. True or False: Professional practice in behavior analysis involves the direct application of ABA principles to improve socially significant behaviors.**

**19. The experimental analysis of behavior (EAB) typically involves:**

- a. Solving socially relevant problems
- b. Research in controlled laboratory settings
- c. Intervening in natural environments
- d. Conducting assessments and treatments

**20. Which of the following best distinguishes ABA from behaviorism?**

- a. ABA focuses on philosophical assumptions
- b. ABA applies behavior principles to improve lives
- c. Behaviorism emphasizes intervention
- d. ABA avoids experimental designs

# THE BCBA EXAM STUDY GUIDE

## ASSIGNMENT

Applied Supervision Assignment Plan, revised to include one required video assignment per section of the BACB 6th Edition Task List. These video tasks are designed to demonstrate applied competence and support mastery through direct modeling or verbal explanation.

### Section A: Philosophical Underpinnings

#### 1. Reflection on Goals of Behavior Analysis

Write a 1-page reflection applying description, prediction, and control to a current client's behavior.

#### 2. Radical Behaviorism vs. Mentalism

Compare and contrast radical behaviorism and mentalism using a real-life behavior example.

#### 3. Parsimony and Pragmatism in FBA

Identify how parsimony and pragmatism guided decision-making during a real functional behavior assessment.

#### 4. Presentation on Behaviorism, EAB, and ABA

Prepare a 10-minute presentation defining and differentiating behaviorism, EAB, and ABA with examples.

Video Assignment:

“Explaining the Philosophical Foundations of ABA” – Create a video (5–8 min) explaining to a new supervisee or parent how the philosophical foundations of behavior analysis shape the field's practices, using your own words and relevant client examples.

### Section A

#### Books

#### (Primary Sources)

Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis*, 1(1), 91–97. <https://doi.org/10.1901/jaba.1968.1-91> (Foundational article establishing the dimensions of ABA — description, prediction, control)

Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). *Applied behavior analysis* (3rd ed.). Pearson. (Comprehensive textbook covering philosophical assumptions, radical behaviorism, dimensions of ABA, and distinctions among behaviorism, EAB, and ABA.)

Skinner, B. F. (1953). *Science and human behavior*. Macmillan. (Skinner's seminal work explaining radical behaviorism, determinism, and the scientific study of behavior.)

Skinner, B. F. (1974). *About behaviorism*. Vintage Books. (Further clarification of radical behaviorism vs. mentalism.)

Michael, J. (1993). Establishing operations. *The Behavior Analyst*, 16(2), 191–206. <https://doi.org/10.1007/BF03392677> (Michael's work helps underpin concepts like pragmatism and selectionism, which are critical philosophical assumptions.)

Pierce, W. D., & Cheney, C. D. (2017). Behavior analysis and learning (6th ed.). Routledge. (Broad coverage of behaviorism, experimental analysis of behavior (EAB), and applied behavior analysis (ABA) distinctions.)

Johnston, J. M., & Pennypacker, H. S. (2009). Strategies and tactics of behavioral research (3rd ed.). Routledge. (Focuses on empiricism, parsimony, and experimental design as core scientific foundations.)

Moore, J. (2015). Conceptual foundations of behavior analysis. Sloan Publishing. (Deep dive into the philosophy of science underpinning behavior analysis, including radical behaviorism.)

### **Webpages**

Behavior Analyst Certification Board (BACB). (2022). BCBA 6th Edition Task List and Content Outline.

<https://www.bacb.com/bcba-6th-edition-task-list/>

(Primary source for task list definitions, expectations, and competency descriptions.)

Behavior Analyst Certification Board (BACB). (n.d.). About Behavior Analysis.

<https://www.bacb.com/about-behavior-analysis/>

(Overview of applied behavior analysis, philosophical assumptions, and history.)

Association for Behavior Analysis International (ABAI). (n.d.). What is Behavior Analysis?

<https://www.abainternational.org/about-us/about-behavior-analysis.aspx> (Explains the goals of behavior analysis — description, prediction, control — and distinctions among behaviorism, EAB, and ABA.)

University of West Florida (UWF) ABA Program. (n.d.). Philosophical Foundations of Behavior Analysis.

<https://aba.uwf.edu/philosophy.asp>

(Nice simple explanations about determinism, empiricism, pragmatism, selectionism, etc.)

Cambridge Center for Behavioral Studies. (n.d.). Behavior Analysis: A Brief Overview.

<https://behavior.org/behavior-analysis/>

(High-quality, layperson-friendly breakdowns of radical behaviorism, experimental analysis, and applied behavior analysis.)

## **KEY DEFINITIONS SECTION A**

### **Analytic**

A dimension of ABA that refers to when the experimenter has demonstrated control over the target behavior and a functional relationship exists.

### **Applied**

A dimension of ABA that refers to the commitment to effecting improvements in behaviors that enhance and improve people's lives.

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### Applied Behavior Analysis (ABA)-

The science in which tactics derived from the principles of behavior are applied to improve socially significant behavior and experimentation is used to identify the variables responsible for the improvement in behavior.

### Behavioral

A dimension of ABA that refers to the indication that a study analyzing physical events that can be precisely measured and that the individual whose actions changed is identified.

### Behaviorism-

The philosophy of a science of behavior; there are various forms of behaviorism.

### Conceptually systematic-

A dimension of ABA that refers to when a study's procedures for changing behavior and any interpretations of how or why those procedures were effective are described in terms of the relevant principle(s) from which they were derived.

### Control-

To establish control, independent variables must be manipulated leading to a change in the dependent variable.

### Correlation-

When systematic co-variation between events is found.

### Cultural selectionism-

The transference of behaviors from one member to another within a group of individuals.

### Description

Descriptive knowledge is a collection of facts about the observed events that can be quantified, classified, and examined for possible relations to other facts.

### Determinism

The assumption that the universe is a lawful and orderly place in which phenomena occur in relation to other events and not in a willy-nilly, accidental fashion.

### Effective

A dimension of ABA that refers to an application of behavioral techniques that improves the behavior under investigation to a practical degree.

#### Empiricism

The objective observation of the phenomena of interest; objective observations are “independent of the individual prejudices, tastes, and private opinions of the scientist... Results of empirical methods are objective in that they are open to anyone’s observation, and do not depend on the subjective belief of the individual scientist” (Zuriff, 1985)

#### Experiment

A carefully controlled comparison of some measure of the phenomenon of interest (the dependent variable) under two or more different conditions in which only one factor at a time (the independent variable) differs from one condition to another.

#### Experimental Analysis of Behavior (EAB)-

A natural science approach to the study of behavior as a subject matter in its own right founded by B.F. Skinner; methodological features include rate of response as a basic dependent variable, repeated or continuous measurement of clearly defined response classes, within-subject experimental comparisons instead of group design, visual analysis of graphed data instead of statistical inference, and an emphasis on describing functional relations between behavior and controlling variable in the environment over formal theory testing.

#### Explanatory fiction-

A fictitious or hypothetical variable that often takes the form of another name for the observed phenomenon it claims to explain and contributes nothing to a functional account or understanding of the phenomenon, such as “intelligence” or “cognitive awareness” as explanations for why an organism pushes the lever when the light is on and food is available but does not push the lever when the light is off and no food is available.

#### Functional relation-

A verbal statement summarizing the results of an experiment (or a group of related experiments) that describes the occurrence of the phenomena under study as a function of the operation of one or more specified and controlled variables in the experiment in which a specific change in one event (the dependent variable) can be produced by manipulating another event (the independent variable), and that the change in the dependent variable was unlikely the result of other factors (confounding variables); in behavior analysis expressed as  $b = f(x_1, x_2, \dots)$ , where  $b$  is the behavior and  $x_1, x_2, \dots$ , are environmental variables of which the behavior is a function

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### B. Concepts and Principles

B.1. Identify and distinguish among behavior, response, and class.
B.2. Identify and distinguish between stimulus and stimulus class.
B.3. Identify and distinguish between respondent and operant conditioning.
B.4. Identify and distinguish between positive and negative reinforcement contingencies.
B.5. Identify and distinguish between positive and negative punishment contingencies.
B.6. Identify and distinguish between automatic and socially mediated contingencies.
B.7. Identify and distinguish among unconditioned, conditioned, and generalized reinforcers.
B.8. Identify and distinguish among unconditioned, conditioned, and generalized punishers.
B.9. Identify and distinguish among simple schedules of reinforcement.
B.10. Identify and distinguish among concurrent, multiple, mixed, and chained schedules of reinforcement.
B.11. Identify and distinguish between operant and respondent extinction as operations and processes.
B.12. Identify examples of stimulus control.
B.13. Identify examples of stimulus discrimination.
B.14. Identify and distinguish between stimulus and response generalization.
B.15. Identify examples of response maintenance.
B.16. Identify examples of motivating operations.
B.17. Distinguish between motivating operations and stimulus control.
B.18. Identify and distinguish between rule-governed and contingency-shaped behavior.
B.19. Identify and distinguish among verbal operants.
B.20. Identify the role of multiple control in verbal behavior.
B.21. Identify examples of processes that promote emergent relations and generative performance.
B.22. Identify ways behavioral momentum can be used to understand response persistence.

B.23. Identify ways the matching law can be used to interpret response allocation.
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B.24. Identify and distinguish between imitation and observational learning
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**B-1) Identify and distinguish among behavior, response, and response class.**



1. Behavior:

Behavior refers to any observable and measurable action or activity exhibited by an individual. It includes a wide range of actions, both overt (visible) and covert (internal or private), such as physical movements, vocalizations, thoughts, emotions, and physiological processes. Behavior can be influenced by various factors, including genetics, environment, learning experiences, and internal states.

\*Anything a dead man cannot do (Deadman Test)

Example:

In a social setting, behavior can include actions such as talking, listening, smiling, shaking hands, making eye contact, or nodding.

2. Response:

A response is a specific and observable behavior exhibited by an individual in reaction to a particular stimulus or situation. It is a measurable unit of behavior that can be analyzed and described in terms of its topography (physical form), frequency, duration, intensity, and other relevant dimensions. Responses can be voluntary or involuntary and can be influenced by both internal and external factors.

Example:

If we are using the behaviors from the social setting in the above example, then a segment of the talking exchange is a response, a moment where someone smiles in response to a stimuli, a

## THE BCBA EXAM STUDY GUIDE

specific greeting where people shake hands, when someone makes eye contact following their name being called.... These are instances of the behavior following a prompt.

### 3. Response Class:

A response class is a set of behaviors that share similar functions or serve the same purpose in a given context. These behaviors may differ in their topography (physical form) but have common effects on the environment. Responses within a response class are functionally equivalent because they produce similar consequences or serve the same goal.

Example:

In the context of communication, a response class can include behaviors such as speaking, writing, using sign language, or using gestures. Although the topography of these behaviors varies, they all serve the purpose of conveying information or expressing thoughts.

An individual's behavioral repertoire is all the skills and behaviors this individual has demonstrated over time that he is capable of performing.

In applied behavior analysis, environment refers to stimulus conditions that are internal and external to an individual.

### **Here are four questions related to behavior response and response class:**

1. What is the difference between a behavior response and a response class?
2. How can behavior responses be influenced by external factors?
3. Can you provide an example of a response class in a sports setting?
4. How can an understanding of response classes be beneficial in behavior analysis and intervention planning?

### **B-2) Identify and distinguish among stimulus and stimulus class.**

#### 1. Stimulus:

A stimulus refers to any event, object, or condition in the environment that elicits a response or influences behavior. It can be an external sensory input that triggers a reaction or an internal

event that affects an individual's physiological or psychological state. Stimuli can be visual, auditory, tactile, olfactory, gustatory, or involve other sensory modalities.

Example:

In a classroom, a stimulus can be the sound of the teacher's voice, a visual presentation on the board, or the presence of a particular odor in the room.

## 2. Stimulus Class:

A stimulus class refers to a group of stimuli that share common characteristics or functions and have similar effects on behavior. Stimuli within a stimulus class may vary in physical form or specific features, but they evoke similar responses because they share a common function or elicit comparable reactions from individuals.

Example:

In the context of language learning, a stimulus class can include various objects or pictures that represent a specific category, such as different types of fruits. Although the stimuli within the class may differ in color, shape, or size, they all represent fruits and elicit similar responses or associations.

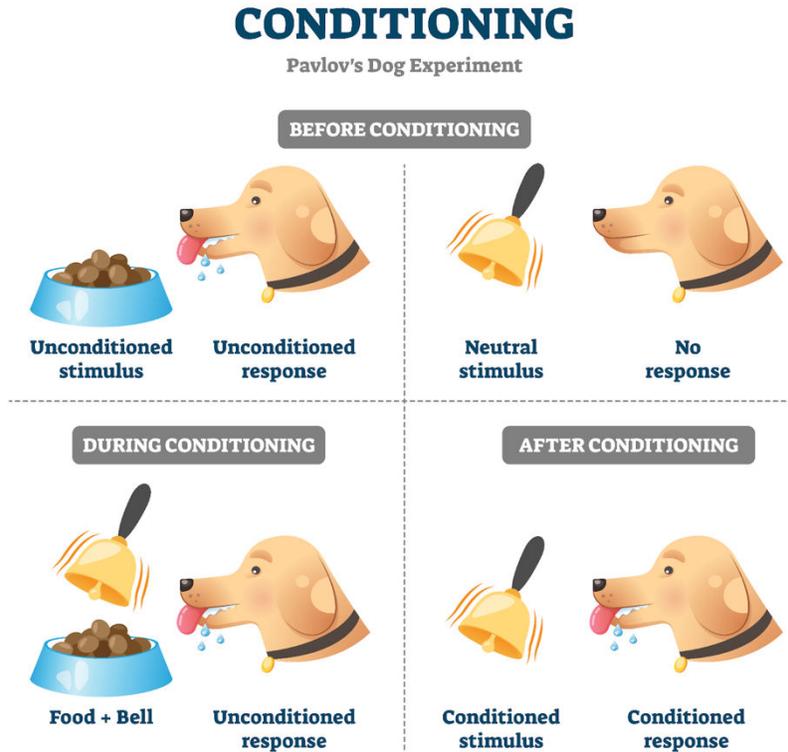
### **Here are four questions related to stimulus and stimulus class:**

1. What is the role of stimuli in behavior analysis and learning?
2. Can you provide an example of a stimulus that elicits a reflexive response?
3. How are stimulus classes useful in teaching and training contexts?
4. In the context of animal behavior, what are some examples of stimulus classes that may influence mating behavior?

### **B-3) Identify and distinguish among respondent and operant conditioning.**

#### **1-a. Respondent Conditioning:** Think R for “reverse” as it happens before the behavior

Respondent conditioning, also known as classical conditioning or Pavlovian conditioning, is a type of learning in which a neutral stimulus becomes associated with a biologically significant stimulus, leading to a change in the response to the neutral stimulus. It involves the pairing of a conditioned stimulus (CS) with an unconditioned stimulus (US) to elicit a conditioned response (CR).



Learning is produced by

Simulus 1-Stimulus-2: Pairing

Example:

A classic example of respondent conditioning is Pavlov's experiment with dogs. Initially, the sound of a bell (neutral stimulus) does not elicit any particular response. However, when the bell is repeatedly paired with the presentation of food (unconditioned stimulus), the dogs start salivating (unconditioned response). Eventually, the dogs begin to salivate in response to the sound of the bell alone (conditioned response).

Operant conditioning (Think O for "Over as it is after the behavior occurs): is a type of learning that focuses on the relationship between behaviors and their consequences. It was first introduced by psychologist B.F. Skinner and involves the use of reinforcement or punishment to shape and modify behavior. Operant conditioning is widely used in various settings, including education, parenting, workplace training, and animal training, to shape and modify behavior.

Examples: You do not drive fast because you were positively punished with a ticket

You go to a specific restaurant because you were positively reinforced with great food

In operant conditioning, behaviors are strengthened or weakened based on the consequences that follow. Here are some examples:

In summary, respondent conditioning involves the association between stimuli and automatic responses, while operant conditioning involves the association between behaviors and their consequences.

### **Selectionism and how it applies to Operant and Respondent Conditioning and Extinction**

#### **Orthogenic VS Phylogenic**

Orthogenic and Phylogenic are terms used in the field of biology and are often applied to the study of behavior, including Applied Behavior Analysis (ABA).

1. Orthogenesis: This term originates from the field of evolutionary biology and refers to the hypothesis that life has an innate tendency to evolve in a unilinear fashion due to some internal or intrinsic mechanism. When applied to behavior, orthogenic refers to the development or changes in behavior that occur within an individual's lifetime. These changes may be due to learning, maturation, or adaptation to changing environments. In the context of ABA, orthogenic changes might refer to the progress an individual makes as they learn new skills or adapt their behaviors in response to interventions.

Orthogenic applies to Skinner's operant conditioning

Ortho, O reminds you this is associated with operant

2. Phylogenesis: Phylogeny, on the other hand, refers to the evolutionary development and history of a species. Phylogenic behaviors are those that are inherited and have evolved over generations to promote survival and reproduction. These behaviors are typically instinctual and common across members of the same species. In ABA, understanding phylogenic behaviors can provide insight into why certain behaviors may be more resistant to change, as they are deeply ingrained and have been reinforced over generations. This correlates with the teachings of Darwin.

Phylogenic refers to respondent conditioning: Ph: We think "PHysical" like respondent is a physical reaction.as it's a physiological change that begins to occur as a result of the association with neutral stimuli and unconditioned stimuli.

In Applied Behavior Analysis, both orthogenic and phylogenic factors are considered when analyzing and addressing behavior. Orthogenic factors can help inform individualized interventions, as they take into account a person's learning history and environmental influences. Phylogenic factors, meanwhile, highlight the influence of biological and evolutionary factors on

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behavior, which can also inform the development of effective, realistic, and comprehensive behavior change strategies.

### **B-4) Identify and distinguish among positive and negative reinforcement contingencies.**

#### 1. Positive Reinforcement:

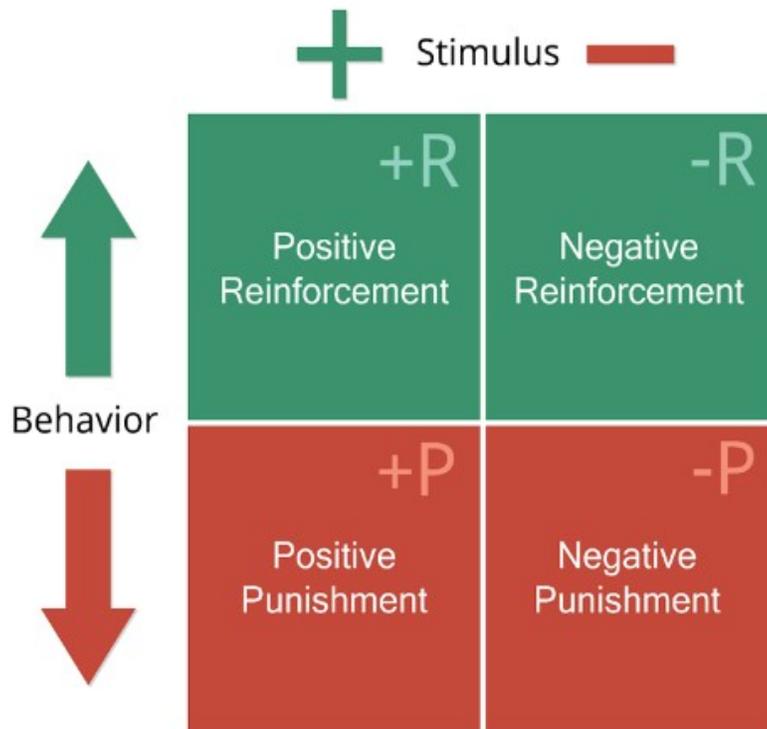
Positive reinforcement is a process in which a behavior is followed by the addition or presentation of a pleasant or desirable stimulus, which increases the likelihood of that behavior recurring in the future. It involves strengthening a behavior by providing a positive consequence.

Example:

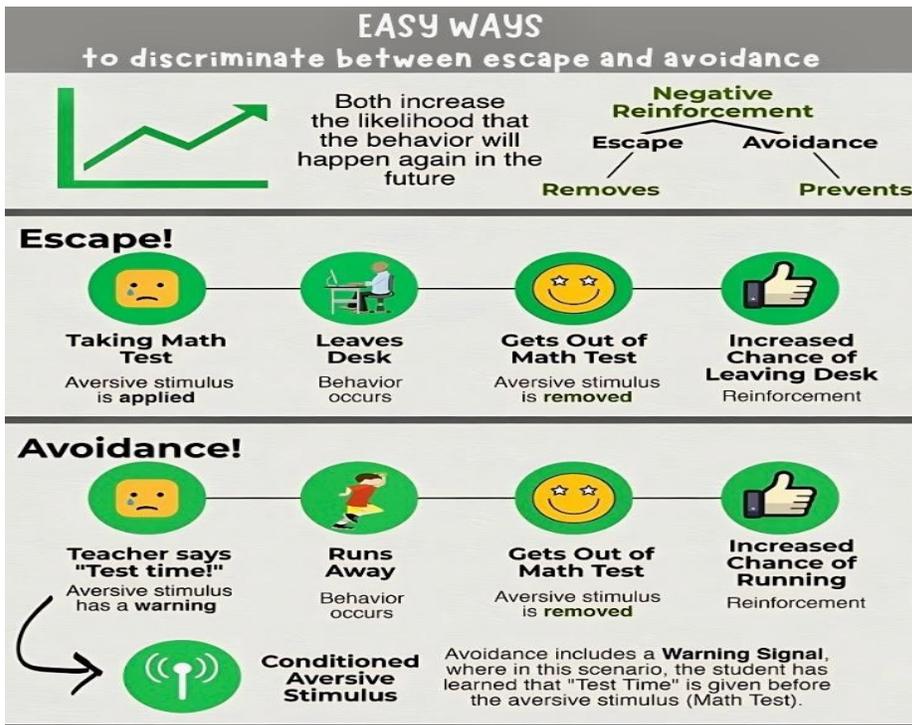
Suppose a student receives a sticker (pleasant stimulus) every time they complete their homework (behavior). The sticker serves as positive reinforcement, and as a result, the student becomes more motivated to complete their homework consistently in the future.

#### 2. Negative Reinforcement:

Negative reinforcement is a process in which a behavior is followed by the removal or avoidance of an aversive or unpleasant stimulus, which increases the likelihood of that behavior recurring in the future. It involves strengthening a behavior by eliminating or reducing an unpleasant consequence.



2 Types: ESCAPE and AVOIDANCE



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Question: What is the difference between if you try to escape from prison or avoid going to prison?

Example:

Suppose a person has a headache (aversive stimulus) and takes a pain reliever (behavior) to alleviate the pain. As a result, the headache is relieved (aversive stimulus is removed). The removal of the aversive stimulus serves as negative reinforcement, and the person is more likely to take pain relievers in the future when experiencing a headache.

**Here are three questions related to positive and negative reinforcement:**

1. Can you provide an example of positive reinforcement in a workplace setting?
2. How does negative reinforcement differ from punishment?
3. What are the potential ethical considerations when using positive and negative reinforcement in behavior modification?

### **B-5) Identify and distinguish among positive and negative punishment contingencies**

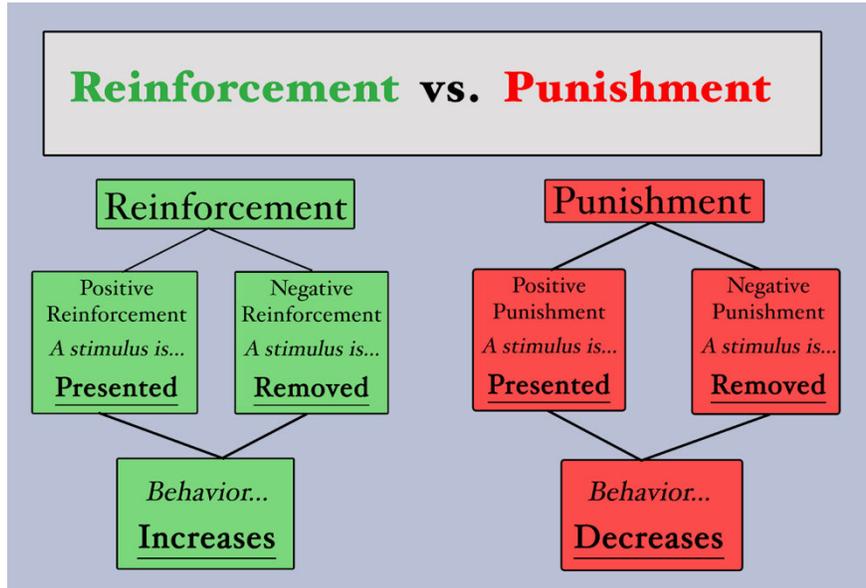
Punishment contingencies are consequences that decrease the likelihood of a behavior occurring again in the future. There are two types of punishment contingencies: positive punishment and negative punishment.

1. Positive Punishment: Positive punishment involves presenting an aversive stimulus after a behavior, which decreases the likelihood of that behavior being repeated. Examples include:
  - A child hitting their sibling and being scolded by their parents.
  - A student talking in class and being reprimanded by the teacher.
  - A dog barking excessively and receiving a loud noise from a training device.
2. Negative Punishment: Negative punishment involves removing a desired stimulus after a behavior, which decreases the likelihood of that behavior being repeated. Examples include:
  - A teenager breaking curfew and having their phone privileges taken away.
  - A driver exceeding the speed limit and receiving a fine, resulting in a loss of money.
  - A child misbehaving and being sent to timeout, resulting in the temporary loss of access to preferred activities.

**Punishment:**

Positive Punishment: Addition of an aversive stimulus that causes a decrease in the behavior in the future

Negative Punishment: Removal of a desirable stimulus that results in a decrease in the behavior.



Negative Punishment is removing a reinforcing stimulus after a behavior to reduce the probability of that behavior being repeated.

Some procedures for negative punishment and examples of each include:

Time-Out is taking away for a brief timespan the opportunity to get positive reinforcement, either by removing a reinforcing item, or by removing the individual from a reinforcing situation or activity.

For example: Jeffrey hits his teacher and is placed in time-out for several minutes.

Response Cost is where desired possessions, activities, or other privileges are taken away.

For example: Michelle refuses to complete her chores and has her cell phone taken away for several days.

**Three questions on this topic:**

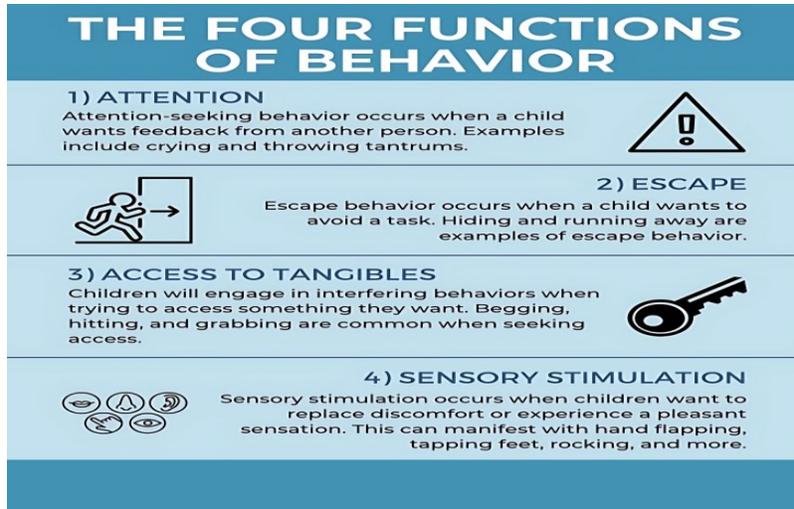
1. What is the difference between positive punishment and negative punishment?
2. How can punishment contingencies be effectively used in behavior modification programs?

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3. What are some potential drawbacks or limitations of using punishment as a behavior management strategy

### **B-6) Identify and distinguish among automatic and socially mediated contingencies.**

Automatic contingencies and socially mediated contingencies are two types of environmental influences that can affect behavior.



1. Automatic Contingencies: Automatic contingencies refer to the consequences of behavior that occur naturally or automatically without the involvement of other people. They are typically governed by the natural environment or physical events.

Examples include:

- Touching a hot stove and experiencing pain.
- Eating spoiled food and getting sick.

(Hint: Automatic, you are either alone or the behavior is not influence by another individual)

2. Socially Mediated Contingencies: Socially mediated contingencies involve the consequences of behavior that are influenced by other people. These consequences can be intentional or unintentional and can shape behavior through social interactions. Examples include:

## **Four Functions of Behavior**

[In] socially mediated reinforcement, the consequence results from the action of another person.—Cooper, Heron, and Heward, 2014, p. 315.

Socially Mediated Positive Reinforcement

(+) Trying to get it - People Around

Socially Mediated Negative Reinforcement

(-) Trying to get away - People Watching

[In] automatic reinforcement, the consequence is produced directly by a response independent of the actions of another.—Cooper, Heron, and Heward, 2014, p. 315.

Automatic Positive Reinforcement

(+) Trying to get it - Alone

Automatic Negative Reinforcement

(-) Trying to get away - Alone

### **Three questions on this topic:**

1. How do automatic contingencies differ from socially mediated contingencies in terms of their impact on behavior?
2. Can you provide examples of socially mediated contingencies that can have both positive and negative effects on behavior?
3. How can an understanding of automatic and socially mediated contingencies be useful in behavior management or behavior change interventions?

### **B-7) Identify and distinguish among unconditioned, conditioned, and generalized reinforcers and punishers.**

Unconditioned, conditioned, and generalized reinforcers and punishers are concepts related to the types of stimuli that can influence behavior.

1. Unconditioned Reinforcers/Punishers: Unconditioned reinforcers and punishers are stimuli that naturally and inherently have reinforcing or punishing properties without any prior learning or conditioning. They are typically biologically significant or meaningful to an individual.

Examples:

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- Unconditioned Reinforcer: Food when someone is hungry, water when someone is thirsty.
- Unconditioned Punisher: Pain, extreme heat, sudden loud noises.

2. Conditioned Reinforcers/Punishers: Conditioned reinforcers and punishers are stimuli that acquire their reinforcing or punishing properties through association with other reinforcers or punishers. They are learned and gain their effectiveness through conditioning.

Examples:

- Conditioned Reinforcer: The bell in Pavlov's experiment, a "clicker" in dog training (a tool paired with primary reinforcement till it elicits the same response, similar to the bell).
- Conditioned Punisher: A certain verbal insult associated with negative people., a bad grade on a report card

They are not naturally punishing or reinforcing but only through conditioning or training/experience/association do they become a reinforcer or a punisher.

### NOTE:

A secondary reinforcer, sometimes called a conditioned reinforcer, is a stimulus or situation that has acquired its function as a reinforcer after pairing with a stimulus that functions as a reinforcer. This stimulus may be a primary reinforcer or another conditioned reinforcer. An example of a secondary reinforcer would be the sound from a clicker, as used in clicker training.

The sound of the clicker has been associated with praise or treats, and subsequently, the sound of the clicker may function as a reinforcer. Another common example is the sound of people clapping – there is nothing inherently positive about hearing that sound, but we have learned that it is associated with praise and rewards.

3. Generalized Reinforcers/Punishers: Generalized reinforcers and punishers are stimuli that have been paired with a variety of different reinforcers or punishers and, as a result, have become reinforcing or punishing in a wide range of situations.

Examples:

- Generalized Reinforcer: Money, which can be exchanged for various goods and services.
- Generalized Punisher: A felony (can't get jobs, gun license, travel restrictions. A bad credit score (can't get a mortgage, high interest rates, can't get loans, can't qualify for housing).

THE DIFFERENCE BETWEEN SECONDARY/GENERALIZED REINFORCERS IS THAT A GENERALIZED REINFORCER IS PAIRED WITH MULTIPLE PRIMARY REINFORCERS SUCH AS MONEY IS PAIRED WITH FOOD, SHELTER, CLOTHES, VACATIONS, ETC. A TOKEN ACTS THE SAME WAY IF IT IS SET UP CORRECTLY AND ALLOWS THE INDIVIDUAL ACCESS TO A CHOICE OF PRIMARY REINFORCERS.

## Primary, Secondary, and Generalized Reinforcers



Primary



Generalized



"Click"

Secondary or Conditioned

When a reinforcer is generalized one item can mean access to an array of motivating things, or a generalized punisher gives you access to a variety of bad things, like a bad credit score. It punishes you when buying a home, a car, higher interest rates, etc.

### Five questions on this topic:

1. How do unconditioned and conditioned reinforcers differ in their influence on behavior?
2. Can you provide examples of how conditioned reinforcers and punishers are used in behavior modification programs?
3. What are some examples of generalized reinforcers and punishers in everyday life?
4. How can the use of generalized reinforcers and punishers enhance behavior change interventions?
5. What are some potential challenges or limitations in using conditioned reinforcers and punishers in behavior management?

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## B-8 B-9) Identify and distinguish among simple schedules of reinforcement and Punishment.

### 1. Continuous Reinforcement:

Continuous reinforcement involves providing reinforcement after every occurrence of the target behavior. It is an effective method to establish and strengthen new behaviors quickly. For example, giving a child a sticker every time they complete a task successfully.

**Intermittent Reinforcement:** Intermittent reinforcement is a behavioral psychology technique that involves giving rewards at irregular intervals. It's also known as partial reinforcement. An example is a slot machine that doesn't reinforce you every time but sporadically, this creates a behavior pattern that is harder to put on extinction.

**Non-contingent reinforcement:** Reinforcement is delivered regardless of the presence of the action or behavior. In NCR, you set the timer based on the inter-response time and select a time just below this time. Watch out for inadvertently reinforcing maladaptive behaviors other than the target

**NCR** A RESPONSE INDEPENDENT TIME BASED SCHEDULE OF REINFORCEMENT

**THE RATIONALE:** By breaking the dependency between the delivery of stimulation and the response of interest, we incur extinction and thus reduce the probability of the response.

**MANIPULATES:** Motivating operations; specifically as an abolishing operation of a reinforcer (reducing its value).

**DISADVANTAGE:** Unsurprisingly, NCR does not teach any new skills or how to access reinforcement. In fact NCR may promote accidental learning and make behaviors more resistant to extinction.

**SETTING THE SCHEDULE:** Calculate the average IRT for the target bx in order to establish a time-based schedule which will serve as an AO. Schedule should be set lower than average IRT.

GIVEN A  AVERAGE IRT

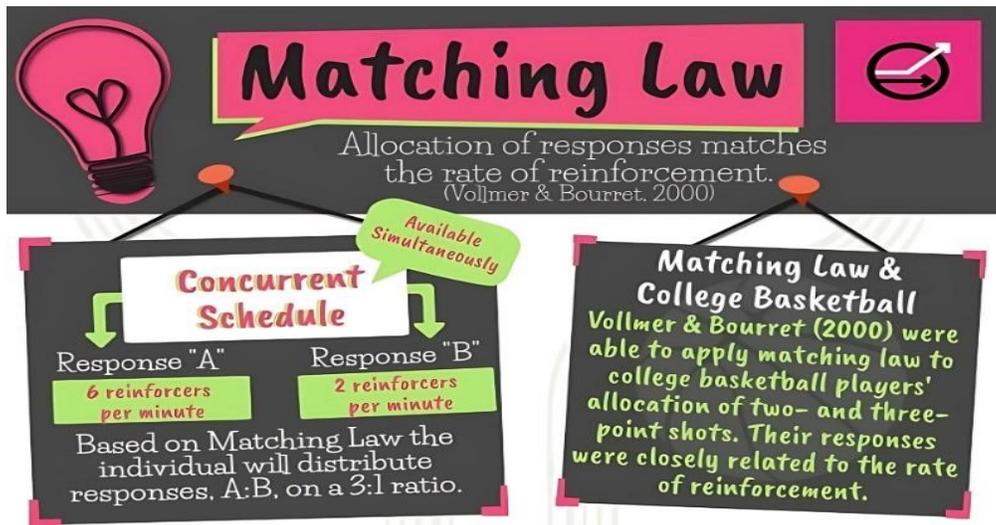
**TWO POSSIBLE SCHEDULES**

**FIXED TIME (FT)**  
Reinforcer is given to the client every five minutes, independent of responding.

**VARIABLE TIME (VT)**  
Reinforcer is given to the client on average every five minutes, independent of responding.

Mayer, Sulzner-Azaroff & Wallace (2014) Behavior Analysis for Lasting Change, Third Edition, Cornwall-on-Hudson, New York, Sloan Publishing, LLC

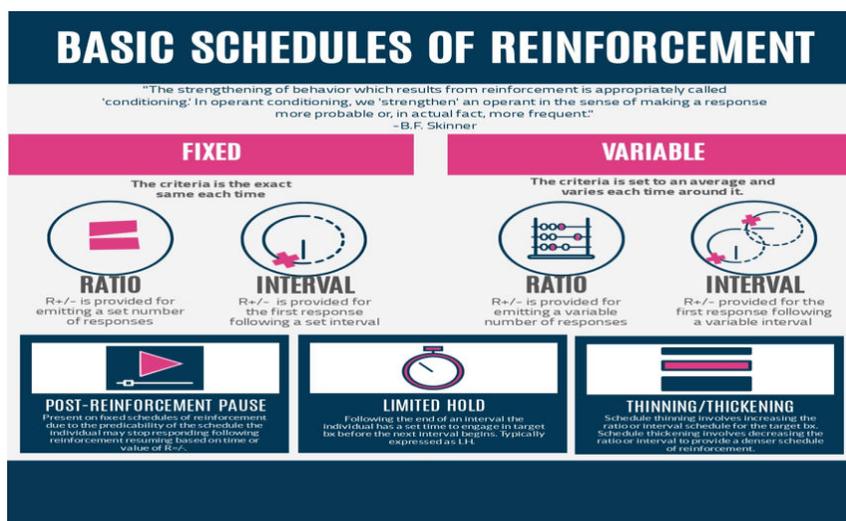
Matching Law (similar as concurrent schedule of Reinforcement): The same behavior will match its level of reinforcement, so if the child is reinforced more for hitting, then yelling, the child will hit more.



When thinking of Matching Law, remember it involves two behaviors and one environment. The behavior that is reinforced more is the one that will occur more often.

Behavioral Contrast: The behavior occurs less in one environment due to either - reinforcement or punishment and then as a result occurs more than baseline at a second environment.

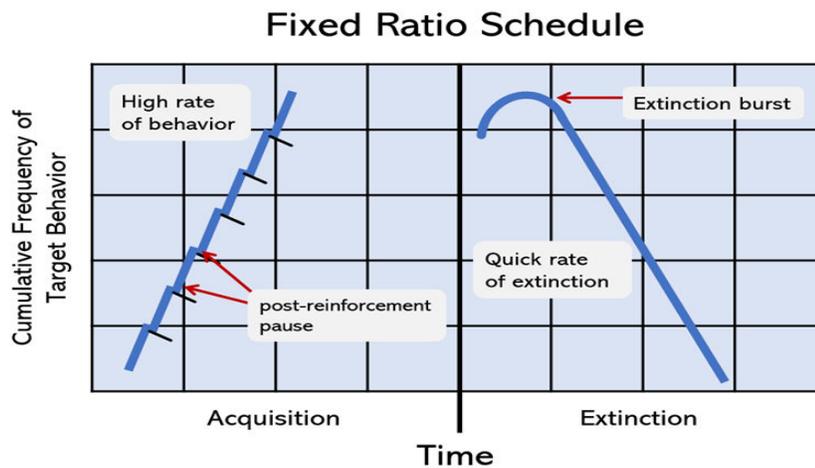
So, remember, the matching law is two behaviors, and one environment and behavioral contrast is one behavior occurring into different environments.



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### 2. Fixed Ratio (FR) Schedule:

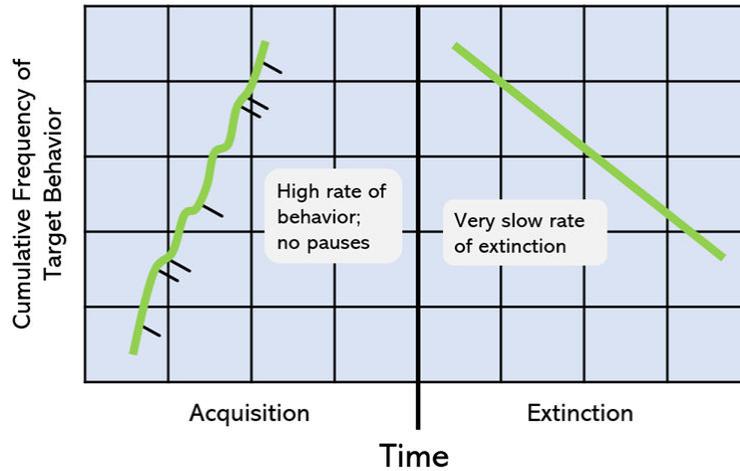
In an FR schedule, reinforcement is delivered after a specific number of responses. For instance, reinforcing a student with a small treat every fifth correct answer during a math exercise. FR schedules typically result in high response rates and can be useful for promoting consistent and frequent behavior.



### 3. Variable Ratio (VR) Schedule:

A VR schedule delivers reinforcement after an average number of responses, but the exact number varies unpredictably. This unpredictability makes the behavior more resistant to extinction. An example would be a slot machine that pays out after an average of every 10 pulls. VR schedules are often associated with high and steady response rates.

### Variable Ratio Schedule

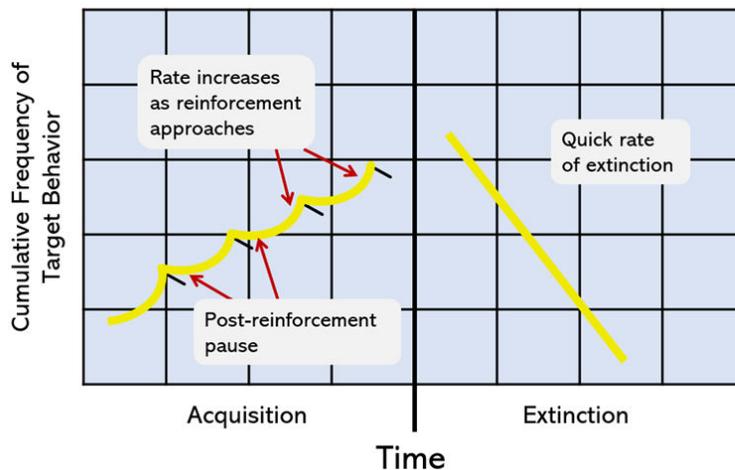


#### 4. Fixed Interval (FI) Schedule:

With an FI schedule, reinforcement is provided for the first response that occurs after a fixed amount of time has elapsed. For instance, a teacher might give a student praise for completing their classwork once every 30 minutes. FI schedules often result in a low response rate immediately after reinforcement is provided and an increased rate as the time for reinforcement approaches.

They produce a scalloped response pattern, meaning that the behavior spikes up just before the reinforcer and then drops abruptly after the reinforcer.

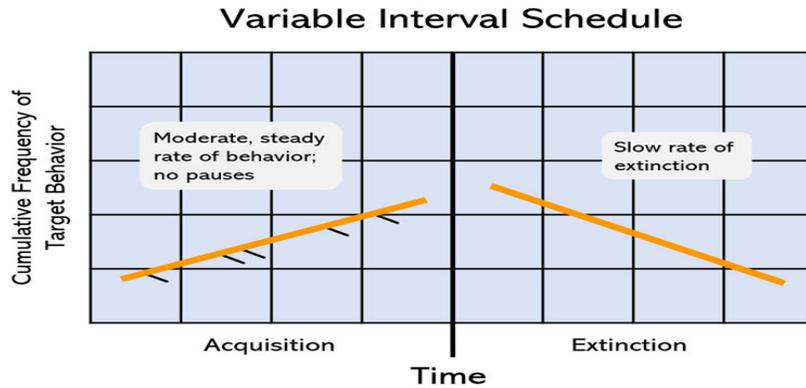
### Fixed Interval Schedule



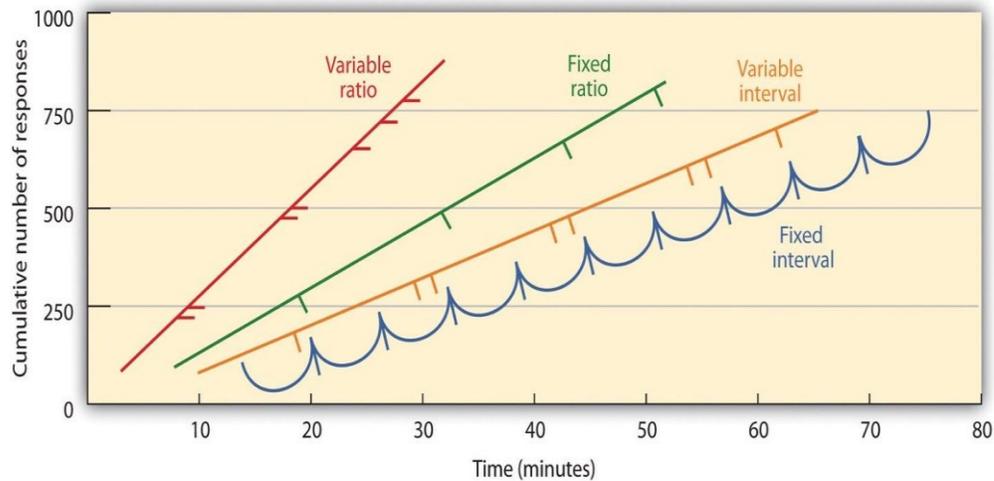
#### 5. Variable Interval (VI) Schedule:

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A VI schedule delivers reinforcement after an average amount of time has passed, but the exact timing varies randomly. An example would be checking emails and receiving positive feedback from your supervisor at unpredictable intervals. VI schedules tend to generate steady and moderate response rates.



The line in the graph displays the pattern of the behavior when this schedule is used:



The image depicts the behavioral patterns associated with the different schedules of reinforcement. Note the consistency of some and the variability in others.

**REINFORCEMENT SCHEDULES**  
A reinforcement schedule refers to the delivery of a reward (reinforcer) to strengthen a behavior (i.e., make it occur more frequently).

**DEFINITION**

Reinforcement schedules are patterns of reinforcement used in operant conditioning. Ratio schedules provide reinforcement after a certain number of behaviors, while interval schedules provide reinforcement after a certain amount of time has elapsed since the last reinforcement.

**EXAMPLES**

- **Fixed interval:** reinforcement is provided after a fixed amount of time has passed since the last reinforcement.
- **Variable interval:** reinforcement is provided after an unpredictable amount of time has passed.
- **Fixed ratio:** reinforcement is provided after a fixed number of responses have occurred.
- **Variable ratio:** reinforcement is provided after an unpredictable number of responses have occurred.

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Applications and Considerations:

Matching reinforcement schedules to the individual's needs and preferences is crucial for effective behavior change.

Continuous reinforcement is often used when teaching new behaviors, while intermittent schedules are typically employed to maintain and strengthen existing behaviors.

Additional techniques to use with reinforcement schedules:

1. **Postponement of the Reinforcement Schedule:** This is frequently employed to cultivate tolerance or patience for deferred gratification. For instance, it could be employed in the context of instructing a youngster to exhibit patience in waiting for their turn or to postpone gratification in accessing a desired object or engaging in a chosen activity. At first, the delay may be brief, but it will gradually be extended as the learner becomes more able to handle the delay.

2. **Indiscriminate Contingencies:** This term is employed when you desire the behavior to happen regularly, even in the absence of instant reinforcement. It entails manipulating the timing and proportion of reinforcement in order to create uncertainty for the subject over when to anticipate it. This can be advantageous for preserving proficiency in authentic environments, where the availability of reinforcement may not always be foreseeable.

3. **Progressive Schedules of reward:** This entails systematically raising the criteria for receiving reward as time goes on. For instance, one could begin with a fixed ratio schedule in which

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reinforcement is given for each right response, and then systematically raise the ratio over time. This can be advantageous for enhancing stamina or augmenting the intricacy of a skill gradually.

Each of these tactics is applicable, based on the specific objectives for the individual and circumstances. All of these are instruments within the repertoire of Applied Behavior Analysis, to be employed as necessary to facilitate the cultivation and preservation of favorable behaviors.

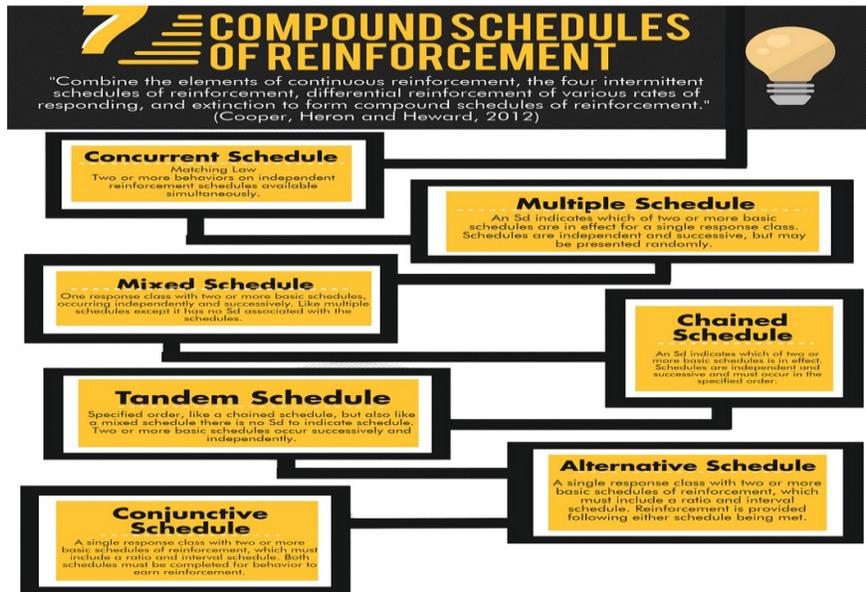
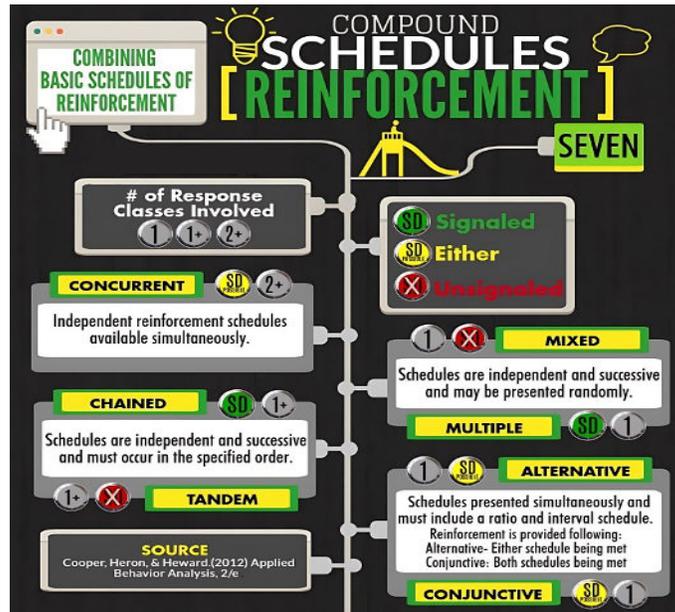
### **B-10) Identify and distinguish among concurrent, multiple, mixed, and chained schedules of reinforcement**

Tip: M&M are similar except mixed proceeds with and SD

Tip 2: Chained and Tandem are similar except the SD. think Channing Tadem

Tip 3: Alternative and Conjunctive go together but small difference: Think AC/DC or AC - Atlantic City

Compound Schedules of reinforcement



Discriminated Schedules of Reinforcement:

Schedule: Concurrent or (Matching Law)

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Description: Two or more schedules of reinforcement, each with a correlated  $S^D$ , operate independently and simultaneously for two or more behaviors.

“EX: A student is given two math worksheets, one blue with addition problems, one white with subtraction problems. The student can work on either or both types of problems, and earns a reinforcer for every 10 correct answers to addition problems, and every 5 correct answers to subtraction problems.”

(conc FR 10/FR 5)

Multiple Schedule: Think M&M, as Mixed and multiple are the same besides the SD with Multiple

Two or more basic schedules of reinforcement for the students during their daily math practice, a student is given a (mult) same behavior operate successively, usually in random blue worksheet or a white worksheet. Which color sequence. An SD is correlated with each component worksheet is assigned each day varies randomly. Reinforcement is delivered each time the Regardless of color, each worksheet contains a mix response requirements are met for the schedule in of 100 addition problems.

On blue worksheet days, effect the student earns a reinforcer for each 10 correct answers. On white worksheet days, the student receives a reinforcer each time he correctly answers a variable number (average, 5) of problems.

(Multiple schedule with a clear SD (blue worksheet) eliciting this stimulus prior to the FR 10/VR 5

Mixed Schedule

The exact same but in mixed there isn't an SD preceding the schedule of the same FR 10/VR 5

Chained Schedule: \*Think Channing Tatum (Actor) as Chained and Tandem are the same besides the SD in Chained

Two or more basic schedules, each correlated with an A student receives a worksheet containing 20 (chain) SD, operate in a specified sequence. The component addition problems. When the student has correctly schedules may require the same behavior or different answered all of the problems, he receives a second behaviors.

Meeting the response requirement in the first worksheet, this one with 10 subtraction problems. Component presentation of the SD for the second after correctly answering the 10-subtraction sequence must be completed, and so on until all problems, then the student receives a reinforce elements in the chain have been completed.

Completing (chain FR 20/FR 10) the last element normally produces unconditioned or conditioned reinforcement in applied settings.

#### Tandem Schedule

Two or more basic schedules operate in a specified sequential manner but this one is exactly the same as chained but doesn't precede with an SD. A student receives a worksheet with math problems. A (tand) sequence like a chain schedule. Unlike with a chain she earns a reinforcer for completing 15 problems, schedule, however, an SD is not associated with each and then, the first problem completed after a component schedule. After 2 minutes passes a reinforcer is obtained. (tandem FR 15/FI 2)

#### Compound Schedules of Reinforcement

#### COMBINING NUMBER OF RESPONSES AND TIME

#### SCHEDULE: Alternative:

\*Think AC/DC, Alternative and Conjunctive are similar just conjunctive requires both schedules to be met prior to reinforcement, whereas Alternative doesn't

DESCRIPTION: Reinforcement is obtained by meeting the response requirements of any of two or more simultaneously available component schedules. Reinforcement is delivered regardless of

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which schedule component is met. All component schedule requirements are reset following reinforcement. Either schedule is met they receive a reinforcer.

EX: A student receives a worksheet with math problems and is instructed to begin. If 15 correct answers are emitted prior to the elapse of 3 minutes, a reinforcer is delivered. If the FR requirement is not met after 3 minutes, the first correct answer from that time forward is reinforced.”

(FI 3-min/FR 15)

### SCHEDULE: Conjunctive

Description: Reinforcement follows the completion of response. A student receives a worksheet with math problems.

Conjunctive requirements for two or more schedules simultaneously operating, so whether the participant has 2 minutes pass by or completes 15 correct responses, the individual will receive reinforcement.

(Conjunctive schedule FR 15/FI 2, if either are completed reinforcement is delivered.

### Some techniques associated with Complex Reinforcement Schedules

#### Limited Hold:

This is a qualification which can be added to a reinforcement schedule which places a set time limit from when a prompt is given to when the individual must perform the required action. If that action is completed after the time limit, the individual does not earn the reward. The purpose of using a limited hold is to encourage a fast response to the prompt.

Adjunctive Behaviors occur independently of schedule control or while waiting for reinforcement when that reinforcement isn't yet available.

A Lag Schedule is a variation of an intermittent schedule of reinforcement in which reinforcement is given for a response that is different from previously reinforced responses made by the individual.

A Delayed Reinforcement Schedule is another variation of an intermittent schedule of reinforcement in which, when the individual gives a correct response, the reinforcement for that response is purposely delayed in order to teach the individual skills such as tolerating delayed gratification or developing self-control.

Breaking Point in progressive schedules of reinforcement occurs when, regardless of the individual's behavior, the criteria for earning reinforcement are methodically increased until the individual reaches the breaking point and stops responding.

Ratio Strain:

A reinforcement schedule needs to be thinned gradually. If it is thinned too quickly, ratio strain can occur, and the individual might stop responding or might start demonstrating either the previously targeted behaviors or new undesired behaviors.

Quiz for reinforcement schedules:

1. Which reinforcement schedule involves delivering reinforcement after every occurrence of the target behavior?

- a) Fixed Ratio (FR) Schedule
- b) Continuous Reinforcement
- c) Variable Interval (VI) Schedule
- d) Fixed Interval (FI) Schedule

2. Which reinforcement schedule delivers reinforcement after an average number of responses, but the exact number varies unpredictably?

- a) Continuous Reinforcement
- b) Fixed Ratio (FR) Schedule
- c) Variable Ratio (VR) Schedule

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d) Variable Interval (VI) Schedule

3. True or False: Fixed Interval (FI) schedules typically result in high and steady response rates.

### **B-11) Identify and distinguish among operant and respondent extinction as operations and processes.**

1-a. Respondent Conditioning:

Respondent conditioning, also known as classical conditioning or Pavlovian conditioning, is a type of learning in which a neutral stimulus becomes associated with a biologically significant stimulus, leading to a change in the response to the neutral stimulus. It involves the pairing of a conditioned stimulus (CS) with an unconditioned stimulus (US) to elicit a conditioned response (CR).

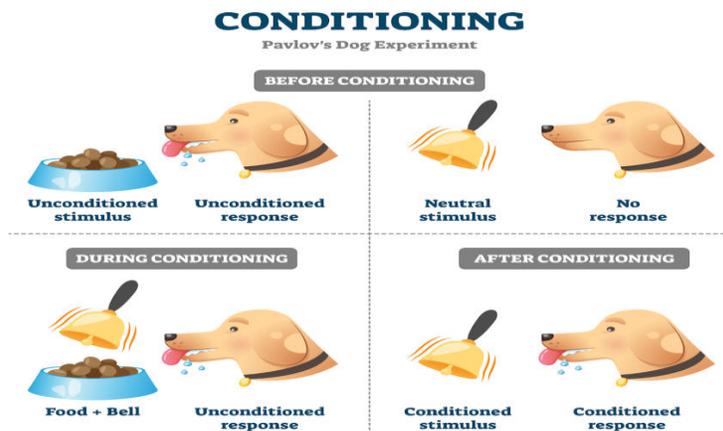
Example:

A classic example of respondent conditioning is Pavlov's experiment with dogs. Initially, the sound of a bell (neutral stimulus) does not elicit any particular response. However, when the bell is repeatedly paired with the presentation of food (unconditioned stimulus), the dogs start salivating (unconditioned response). Eventually, the dogs begin to salivate in response to the sound of the bell alone (conditioned response).

1-b. Respondent Extinction:

If the conditioned stimulus (the bell) was to occur many times without the meat it would go on extinction. Extinction is when a previously reinforced behavior is no longer reinforced.

In the picture below, if you consistently presented the Bell (neutral stimulus) without the Meat, or the (unconditioned stimulus), the salivation response would go on extinction



## 2-a. Operant Conditioning:

A consequence is a stimulus change that occurs after a behavioral response.

Operant conditioning, also known as instrumental conditioning, is a type of learning in which the frequency or probability of a behavior is influenced by the consequences that follow it. It involves the association between a behavior and its consequences, which can be either reinforcing or punishing, leading to changes in the likelihood of the behavior occurring again.

### Example:

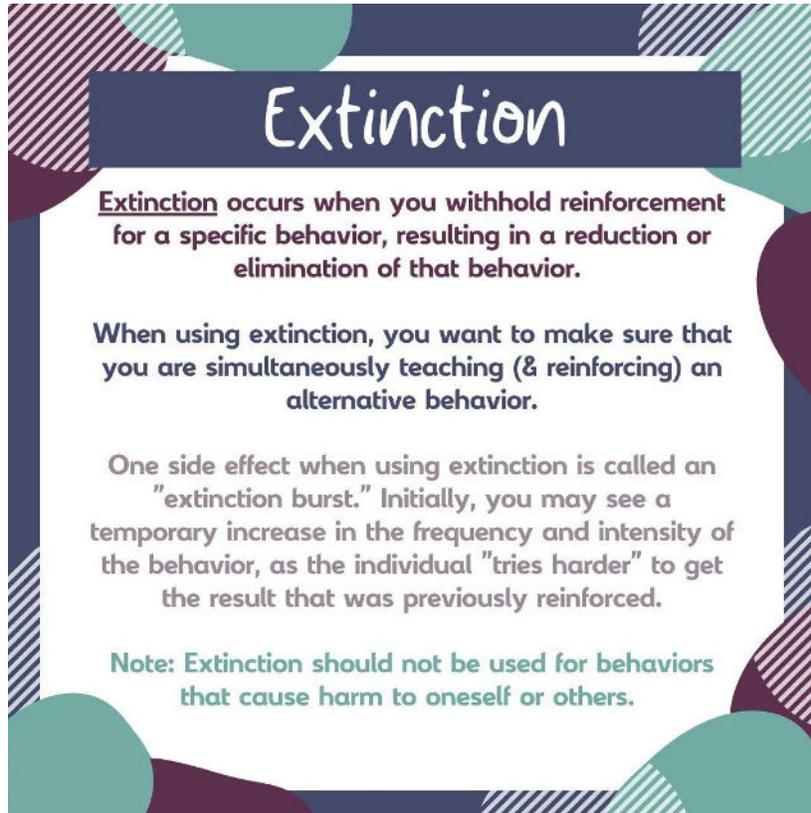
Suppose a child receives praise and a small treat every time they complete their homework (behavior). The positive reinforcement of praise and treats increases the likelihood of the child completing their homework in the future. Over time, the child's behavior of completing homework becomes more frequent due to the reinforcing consequences.

## 2-b Operant Extinction:

Removal or discontinuation of a previously reinforced behavior. In operant extinction the reinforcer occurs after the behavior, where in respondent extinction the dissociation occurs prior to the response.

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\*\*When we stop giving in to demands when child is tantrumming due to a history of receiving items for this behavior, this removal of reinforcement will eventually result in the response not occurring when a desired item is wanted.



### Types of Extinction

Positive reinforcement extinction: the maintaining consequence is positive reinforcement.

- Attention
- Tangible.

Automatic reinforcement extinction: the maintaining consequence is automatic reinforcement

- Sensory

Negative reinforcement: the encouragement of certain behaviors by removing or avoiding a negative outcome or stimuli.

- Escape

Example:

Suppose the parents forget about the praise and treat when the child completes their homework. Over time, the child stops completing their homework.



In summary, respondent conditioning involves the association between stimuli and automatic responses, while operant conditioning involves the association between behaviors and their consequences.

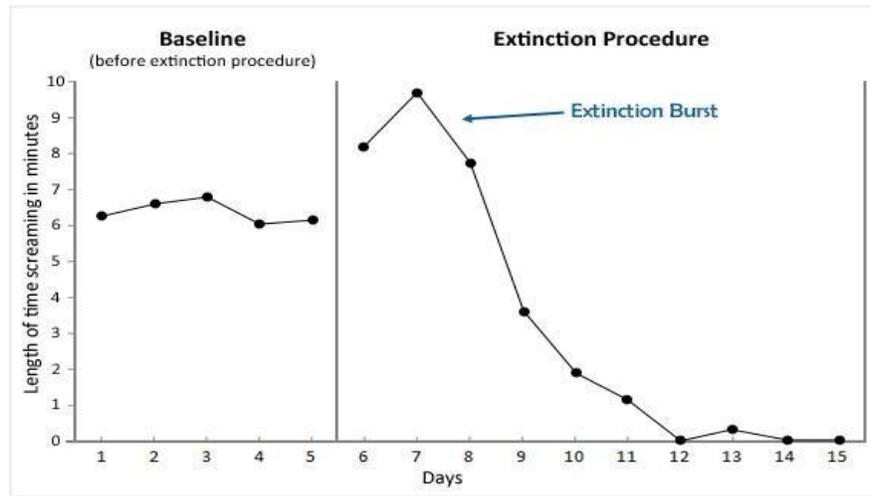
## Extinction Can Involve...

Based on the function of a certain behavior extinction can involve:

- The withholding of attention by ignoring the problem behavior. Also known as Planned Ignoring.
- Not allowing access to tangible items or activities.
- Not allowing the observee to escape or avoid a certain task/situation.
- Preventing reinforcing sensory feedback.

Extinction burst: Is the temporary increase in the behavior following the removal or termination of reinforcement of this previously reinforced behavior

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This is the pattern you would see in an extinction burst, where you have a steadily reinforced behavior that, then has a removal or termination of reinforcement and then drastically increases temporarily before decreasing and ultimately going EXTINCT.

### \*\*Some considerations when targeting a behavior for extinction:

1. **\*\*Extinction\*\***: This occurs when a previously reinforced behavior is no longer reinforced, leading to a decrease in the frequency of that behavior. Essentially, if a behavior that used to attract certain responses or rewards stops being rewarded, the behavior gradually diminishes.
2. **\*\*Spontaneous Recovery\*\***: After a behavior has decreased or stopped during extinction, it might suddenly reappear even without reinforcement. This temporary reappearance, called spontaneous recovery, usually happens after a pause and is typically less frequent and shorter-lived than the original behavior.
3. **\*\*Resurgence\*\***: This happens when an old behavior that had been replaced by a newer, reinforced behavior reoccurs because the newer behavior has stopped being reinforced. Essentially, when the current method to obtain a reward is no longer effective, the individual might revert to previous behaviors to try and get that reward.
4. **\*\*Resistance to Extinction\*\***: This describes how persistent a behavior is in the face of extinction. Some behaviors are more resistant to extinction and will continue for a long time

without reinforcement, depending on various factors like the history of how often and how consistently the behavior was reinforced in the past.



**B-12) Identify examples of stimulus control.**

Definitions and examples of stimulus control

<b>STIMULUS CONTROL</b>	
<b>DEFINITION</b> Stimulus control refers to a situation where the presence or absence of a stimulus can control behavior. In other words, the stimulus is in control. Stimulus control is considered to be present when a person or animal responds one way in the presence of the stimulus and another way in its absence.	<b>EXAMPLE</b> Drivers observe traffic lights changing colors: red means stop, yellow means slow down, and green means go. Drivers learn to associate each color with the corresponding action to avoid accidents. Over time, the color of the traffic light automatically triggers the appropriate response from the driver.

Stimulus control refers to the influence of a specific stimulus or set of stimuli on the occurrence of a behavior. It takes place when a behavior is more likely to occur in the presence of certain discriminative stimuli, and it is less likely to occur in their absence. In other

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words, the presence or absence of specific stimuli serves as signals for the occurrence or non-occurrence of a behavior.

Examples of stimulus control include:

1. Classroom Behavior: A student raises their hand to answer a question when the teacher is facing the class and holding a question sheet, but does not raise their hand when the teacher is engaged in a different activity.
2. Animal Training: A dog sits on command when the owner is holding a treat, but does not sit without the presence of the treat or the verbal cue.
3. Driving: A driver slows down when approaching a traffic light turning yellow, as the yellow light serves as a discriminative stimulus for the behavior of slowing down to avoid running a red light.

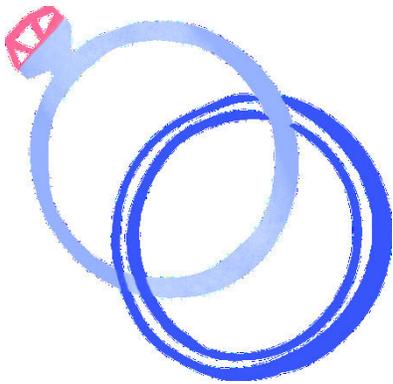
### **B-13) Identify examples of stimulus discrimination.**

1. Discrimination: Discrimination refers to the ability to differentiate between different stimuli or situations and respond accordingly. It involves responding differently to different stimuli based on their unique characteristics.

Discriminative Stimulus or SD: Is the stimuli that elicits the specific response. You see 20 things when driving but the discriminative stimulus is the red light if that is the stimulus that gets you to stop. You discriminate between the colors, and the tree's, the people on the bike to the one stimulus the gives you negative reinforcement, the red light.



Stimulus Delta, or S (delta Greek sign) is the stimulus that lets you know that you will not be reinforced. You are hungry and want to go to the diner, but there is a CLOSED sign on the door, that is the S-Delta as it alerts you to an absence of reinforcement.



A wedding band on the finger of someone that you wanted to ask out alerts you to a lack of reinforcement, whereas if the same person were not wearing a wedding band or engagement ring, this would be the discriminative stimulus for you to ask them out and thus you would get reinforced by having a desired person in your presence.

<b>S<sup>D</sup></b>	<b>Discriminative Stimulus</b> • signals there is reinforcement available for a target behavior
<b>S<sup>Δ</sup></b>	<b>Stimulus Delta</b> • signals that reinforcement is not available for a target behavior

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Example: A child with autism is learning to identify colors. The therapist presents various colored objects and teaches the child to correctly identify each color. The child learns to discriminate between colors by responding "red" when shown a red item, "blue" when shown a blue item, and so on.

### **B-14) Identify and distinguish between stimulus and response generalization.**

**Generalization:** Generalization refers to the transfer of learned skills or behaviors from one situation or context to another. It involves applying what has been learned in one setting to similar settings or situations.

Example: A child with a developmental delay has learned to tie shoelaces in the therapy room. The therapist then encourages the child to practice tying shoelaces in different environments, such as at home and at school, to ensure generalization of the skill across contexts.



We plan and teach response generalization by having people learning with different people, settings, types of shoes, etc. The goal is to promote generalization by mastering with numerous variables.

Stimulus Generalization refers to the phenomenon where an individual exhibits a learned response to stimuli that are similar, but not identical, to the original stimulus. For example, if a child learns to say "thank you" in response to receiving a gift from a family member, they may

also say "thank you" when receiving a gift from a teacher or a friend. The key element here is that the response is triggered by different stimuli that share certain characteristics.

Example of Stimulus Generalization:

A child learns to say "please" when asking for a cookie from their mother. Later, when they are at a friend's house and want a cookie from their friend's mother, they also say "please." Here, the child is generalizing the learned behavior (saying "please") to a similar stimulus (the friend's mother) in a different context.

Same response, different Stimulus

Response Generalization on the other hand, involves the production of responses that are functionally equivalent to the target behavior, but differ in form. For instance, if a child learns to politely ask for help by saying, "Can you help me, please?" they might also generalize this behavior by saying, "I need help, please," or using non-verbal cues like raising their hand. This form of generalization reflects the ability to use different responses in similar situations while still achieving the same goal or function.

The same stimulus, a different response with the same function

Example of Response Generalization:

A student learns to raise their hand to ask a question during class. Over time, they start using other behaviors to ask for help, such as saying "Excuse me" or moving closer to the teacher. In this case, the student is demonstrating response generalization by using various ways to seek assistance while the context (needing help in class) remains the same.

These examples help clarify how behaviors can generalize across different stimuli and responses in various situations.

In summary, stimulus generalization occurs when a response is triggered by various similar stimuli, while response generalization involves the use of different responses that serve the same function in response to the same stimulus. Understanding these concepts is crucial for effective behavioral interventions and teaching strategies.

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### **B-15) Identify examples of response maintenance.**

Maintenance: Maintenance refers to the ability to sustain or retain acquired skills or behaviors over time. It involves ensuring that the learned skills are maintained and continue to be used even after the intervention or teaching has ended.

Example: A teenager with attention deficit hyperactivity disorder (ADHD) has been taught organizational skills by a behavior therapist. The therapist regularly checks in with the teenager to reinforce and review the use of these skills, ensuring their maintenance over time. So you learned all these different things now you need to maintain them when you learn new things.

In regards to ethics, we must plan for the skills to be maintained and part of our exit plan, or transition plan from direct services. This is our ethical responsibility.

**NEW**

**PROGRAMMING**  
*for*  
**Generalization & Maintenance**

The effects of contingencies (reinforcement/extinction/punishment) and learning spread to other settings, behaviors or stimuli.

The ability of the individual to continue to demonstrate acquired responses over time, after reinforcement has been thinned.

**General Case Analysis**  
Identify the common stimuli, multiple examples, response requirements and other relevant features of the natural environment.

**Common Stimuli**  
Include the salient stimuli from the generalization setting into the training setting.

**Multiple Exemplars**  
Include variants of the common stimuli in training to plan for generalizing the skill beyond the common stimuli.

**Train Loosely**  
During training, vary misc. stimuli that are not critical to the natural environment.

**Negative Examples**  
Include examples of inappropriate responses as well as conditions in which responding should not occur.

**Indiscriminable Contingencies**  
Vary the reinforcement schedule and make sure the learner cannot predict when reinforcement will or will not occur.

**Mediating Stimulus**  
Make sure to train a stimulus during instruction that can be ported and ensure responding in generalization settings.

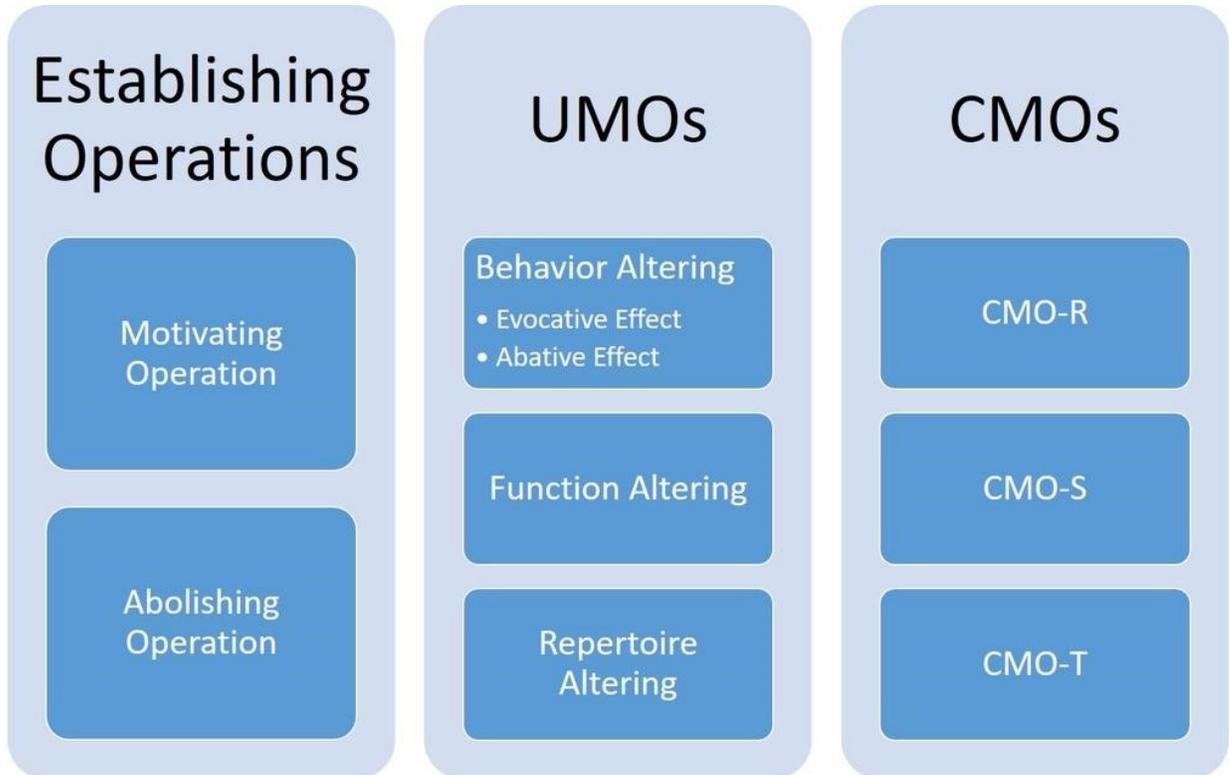
Here are four questions related to discrimination, generalization, and maintenance in ABA:

1. How can you promote generalization of a newly acquired social skill to various community settings?
2. What strategies can be used to teach discrimination between similar objects or sounds?
3. How do you assess whether a learned behavior has been successfully maintained over an extended period of time?
4. What factors can influence the generalization of language skills in children with autism from therapy sessions to everyday interactions?

Please note that ABA is a complex field, and these questions and examples provide a basic understanding of discrimination, generalization, and maintenance. Further exploration and research are recommended for a comprehensive understanding of ABA principles and practices.

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### B-16) Identify examples of motivating operations.



In Applied Behavior Analysis (ABA), motivating operations (MOs) refer to environmental variables or events that alter the reinforcing or punishing effectiveness of certain stimuli and, as a result, affect the individual's behavior. MOs can influence the value or significance of consequences, thereby impacting the motivation to engage in specific behaviors.

#### Motivating Operations (Establishing Operations and Abolishing Operations)

Definition: MO is an umbrella term that captures both EOs and AOs within it. MOs are environmental variables that alter the reinforcing or punishing effectiveness of a stimulus. Essentially, MOs alter the value of things for a particular person in a particular context and time.

Establishing Operations (EO): A type of motivating operation that makes a stimulus more desirable (more effective as a reinforcer).

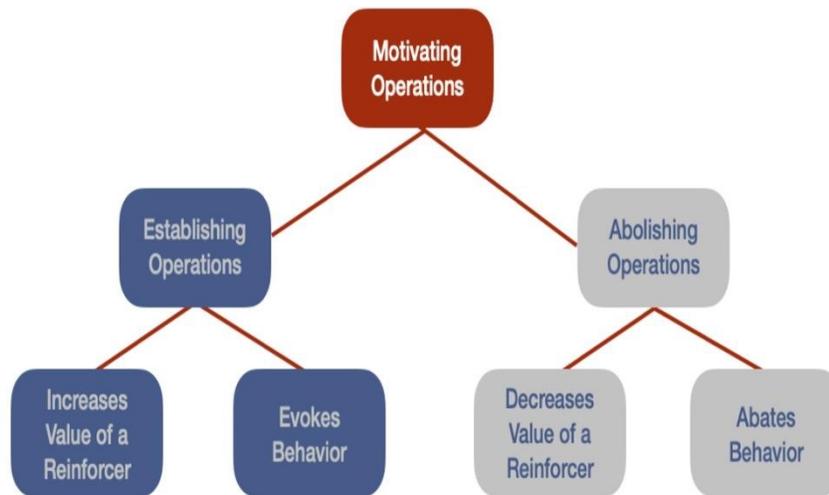
Establishing=Evocative Effect

Example in everyday context: The reinforcing effectiveness of water is established when you are very thirsty. Each time you are thirsty, you will increase the behavior that allows you to

gain access to water. If you were not in a state of water deprivation, the value of water as a reinforcer would be low.

Abolishing Operations (AO): A type of motivating operation that makes the stimulus less desirable (less effective as a reinforcer).

Abolishing= Abative effect

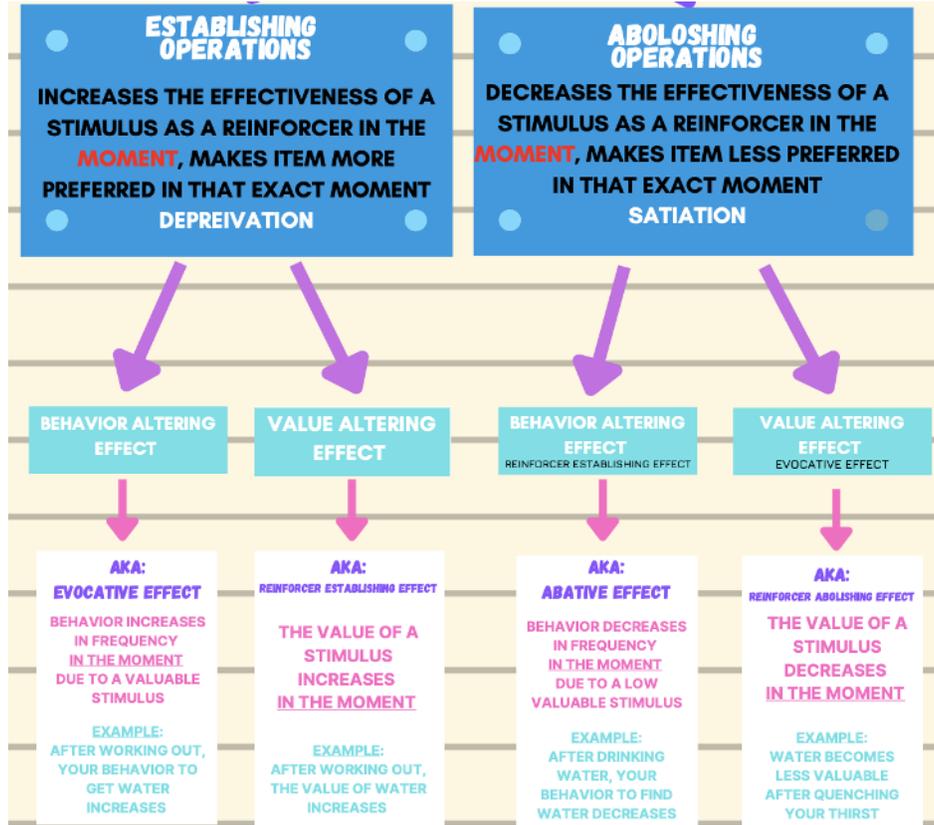


Example in everyday context: You just ate a very large meal, so you are satiated on food and food is not reinforcing to you for the next several hours. Your behavior changes to stop seeking food since you are no longer hungry.

Why it matters: Motivating operations are antecedent variables that alter the value of something as reinforcement. When engaging in clinical problem solving, it is essential to follow a hypothesized behavioral function “upstream” and identify the corresponding MO.

\*This chart shows how MO’s are the over-arching concept. EO’s have an evocative effect and increase the value of the reinforcer, where on the other side Abolishing operations have an Abative effect and decrease the value of reinforcement

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Here are three questions related to motivating operations in ABA:

1. How can you identify and manipulate motivating operations to increase the effectiveness of reinforcers in behavior change programs?
2. In what ways can an abolishing operation be used to decrease problem behavior in individuals with autism spectrum disorder?
3. What assessment methods or tools can be used to identify and measure the impact of establishing operations on behavior and motivation?

Remember that motivating operations are a complex topic within ABA, and these questions and examples provide a starting point for understanding their role. Further exploration and research are recommended for a more comprehensive understanding of motivating operations in ABA.

## **B-17) Distinguish between motivating operations and stimulus control.**

Distinction between Motivating Operations and Stimulus Control

In applied behavior analysis, both motivating operations (MOs) and stimulus control are critical concepts that influence behavior, but they operate through different mechanisms.

Motivating Operations (MOs) are environmental variables that temporarily alter the effectiveness of a reinforcer or punisher and consequently affect the frequency of the behavior associated with that consequence. MOs can be classified into two types: establishing operations (EOs), which increase the potency of a reinforcer, and abolishing operations (AOs), which decrease its effectiveness. For instance, if a person is hungry (an establishing operation), the value of food as a reinforcer increases, leading to an increase in behaviors that result in obtaining food (like cooking or ordering).

Stimulus Control, on the other hand, refers to the phenomenon where the presence or absence of specific stimuli impacts the likelihood of a particular behavior being emitted. When a behavior is reinforced in the presence of a certain stimulus (the "discriminative stimulus"), it is more likely to occur when that stimulus is present. For example, if a child learns to raise their hand to speak when the teacher is present (the discriminative stimulus), the child is demonstrating stimulus control. The behavior of raising their hand is more likely when the teacher is visible, indicating that the presence of the teacher influences the response.

In summary, while motivating operations affect the value of reinforcers and change behavior's frequency based on motivation, stimulus control involves the influence of specific environmental cues that signal when a behavior is likely to be reinforced.

#### Questions

How do establishing operations differ from abolishing operations in the context of motivating behavior?

Can you provide an example of how stimulus control is established through reinforcement?

In what ways might understanding both concepts enhance intervention strategies in applied behavior analysis?

#### Conditioned Motivating Operations

A Conditioned Motivating Operation (CMO) is a type of motivating operation (MO) that derives its value-altering and behavior-altering effects through a learning history. Unlike unconditioned motivating operations (UMOs), which are innate (e.g., hunger, thirst), CMOs are learned over time based on experience and context. CMOs affect the value of a reinforcer or punisher and increase or decrease the likelihood of behaviors associated with them.

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## Types of Conditioned Motivating Operations (CMOs)

<b>Conditioned Motivating Operations (CMO)</b>		
<b>CMO-R REFLEXIVE</b> A condition or object that acquires its effectiveness as an MO by preceding a situation that either is worsening or improving. <i>Can Encourage or Discourage Performance</i>	<b>CMO-S SURROGATE</b> A stimulus that has acquired its effectiveness by accompanying some other MO and has come to have the same value-altering and behavior-altering effects as the MO that it has accompanied. <i>Needs to be Paired</i>	<b>CMO-T Transitive</b> An environmental variable that establishes (or abolishes) the reinforcing effectiveness of another stimulus and thereby evokes (or abates) the behavior that has been reinforced by that other stimulus. <i>You CANNOT have access to the stimulus you want until you solve the problem.</i>

### 1. Surrogate CMO (CMO-S)

A CMO-S is created when a previously neutral stimulus is repeatedly paired with an unconditioned motivating operation (UMO) or another MO. Over time, the neutral stimulus takes on the value-altering and behavior-altering effects of the original MO.

Example:

- Example: A child sees a clock every time they are given lunch (paired with hunger, an unconditioned MO). Over time, seeing the clock itself may evoke behaviors like asking for food, even when the child isn't actually hungry.

Key Distinction: CMO-S derives its effect through a direct pairing with another MO.

### 2. Reflexive CMO (CMO-R)

A CMO-R occurs when a stimulus signals the worsening or improvement of a situation, motivating behavior to either avoid or achieve the anticipated outcome. It often functions as a warning signal or prompts escape/avoidance behaviors.

Example:

- A teacher's countdown (e.g., "5 seconds to finish!") signals that a demand will be placed soon. This motivates the child to comply quickly to avoid the demand escalation.

Key Distinction: CMO-R functions as a signal for worsening or improving conditions.

3. Transitive CMO (CMO-T)

A CMO-T makes another stimulus more valuable because it is required to complete a task or achieve a desired outcome. It typically involves problem-solving behaviors.

Example:

- A locked door creates a CMO-T for the key because the key becomes necessary to open the door. The individual is now motivated to search for the key.

Key Distinction: CMO-T creates a need for another stimulus to achieve the desired goal.

Key Differences Between the Types

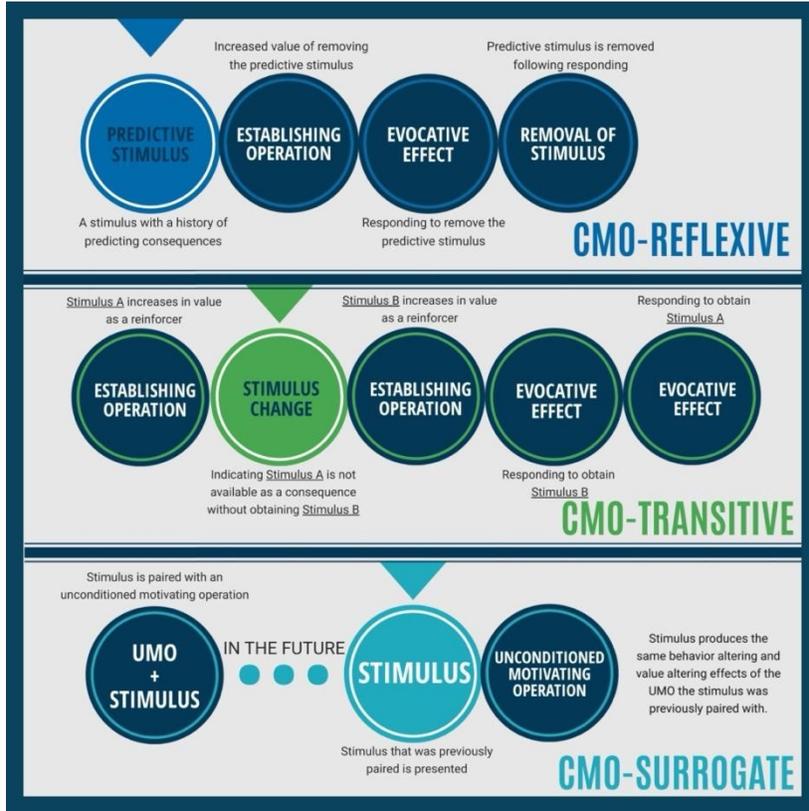
Type    How It Function, Example, Key Feature

CMO-S Gains effects through pairing with another MO. Seeing a clock paired with hunger evokes eating. Direct pairing with another MO.

CMO-R Signals worsening or improving conditions. Countdown motivates compliance to avoid a demand. Signals escape/avoidance behavior.

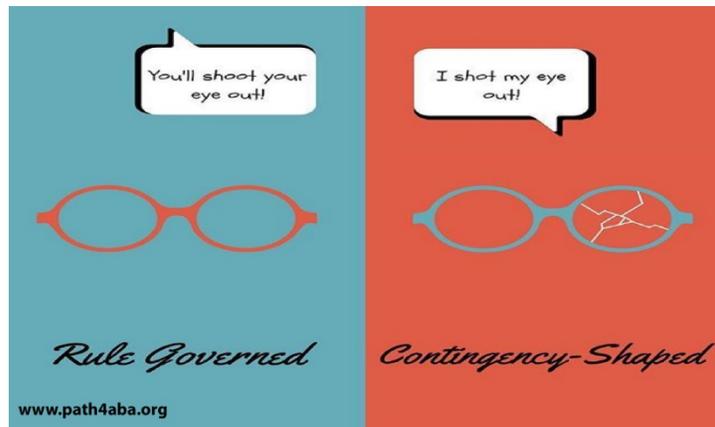
CMO-T Makes another stimulus necessary to achieve a goal. A locked door motivates searching for a key. Creates a need for a related stimulus.

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Understanding CMOs is critical for behavior analysts as they guide interventions to manipulate motivation in clients. By identifying CMOs and their effects, analysts can implement antecedent strategies that effectively increase or decrease certain behaviors.

**B-18) Identify and distinguish between rule-governed and contingency-shaped behavior.**



In applied behavior analysis (ABA), rule-governed behavior and contingency-shaped behavior are two important concepts.

1. Rule-governed behavior: Rule-governed behavior refers to behavior that is controlled by verbal or written rules or instructions. In other words, individuals engage in specific behaviors based on the guidance provided by rules. Here's an example:

More about Rule Governed Behavior

Rule-governed behavior in applied behavior analysis (ABA) refers to actions controlled by a rule or a verbal statement of a contingency, rather than direct contact with contingencies of reinforcement or punishment. This type of behavior is important because it allows individuals to modify their actions based on descriptions or instructions without having to experience consequences directly. Here are the essential components that define rule-governed behavior:

1. Rule: A rule is a verbal or written statement that specifies a contingency—it tells a person what actions to take under certain conditions to achieve a desired outcome. Rules can be simple or complex, and they may involve specifying the behavior, the conditions under which it should be performed, and the consequences that follow from that behavior.

2. Understanding the Rule: For behavior to be rule-governed, the individual must understand the rule. This includes not only comprehending the language used but also recognizing the conditions under which the rule applies and the actions required.

3. Ability to Follow the Rule: The individual must be able to perform the behavior as described by the rule. This includes having the necessary skills and environmental conditions that enable the execution of the behavior.

4. Motivation: There must be motivation to follow the rule. This is often tied to the consequences outlined in the rule itself, such as rewards for compliance or penalties for non-compliance. The effectiveness of rule-governed behavior often depends on the individual's history with similar rules and the perceived value of the consequences associated with the rule.

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5. Communication Skills: Especially in complex social or work environments, effective rule-governed behavior often requires good communication skills, so that individuals can ask for clarification about the rules and understand them correctly.

Rule-governed behavior differs from contingency-shaped behavior, which is learned through direct exposure to consequences. Rule-governed behavior allows for more rapid behavior changes because it doesn't require the individual to experience the consequences personally; instead, they can learn from the rule itself. This type of behavior is foundational in educational settings, workplaces, and in managing social conduct.

Example: Imagine a classroom where the teacher has established a rule that students must raise their hands before speaking. The students follow this rule and raise their hands before speaking, even if the teacher is not actively enforcing it at that moment. The students' behavior is being influenced by the rule, which is an example of rule-governed behavior.

2. Contingency-shaped behavior: Contingency-shaped behavior refers to behavior that is learned through the consequences or contingencies that follow the behavior. In this case, the behavior is shaped by the immediate consequences that follow it. Here's an example:

Example: A child wants a cookie, so they ask their parents politely. The parent gives the child a cookie as a result of their polite request. The child's behavior of asking politely is reinforced by the immediate consequence of receiving a cookie. Over time, the child's behavior of asking politely is shaped and strengthened through this contingency.

Here are four questions related to rule-governed behavior and contingency-shaped behavior:

1. What is the main difference between rule-governed behavior and contingency-shaped behavior in applied behavior analysis?
2. Give an example from everyday life that demonstrates rule-governed behavior.
3. Describe a situation where contingency-shaped behavior is evident in a workplace setting.

4. How can rule-governed behavior and contingency-shaped behavior be used together to promote desired behaviors in educational settings?

**B-19) Identify and distinguish among verbal operants.**

In the field of applied behavior analysis (ABA), verbal operants are specific functional units of language. They are different categories or types of verbal behavior that serve different functions. Here are some common verbal operants:

Verbal Behavior: Skinner is a renowned psychologist and behaviorist who developed an innovative concept known as verbal behavior in 1957. Skinner formally defines verbal behavior as behavior that is reinforced through the mediation of the listener, according to the Journal of Educational Psychology.

1. Mand: A mand is a request or demand made by an individual to obtain a specific item, activity, or attention. It involves expressing a need or desire. Examples include saying "I want water" when feeling thirsty or saying "Can I have a cookie, please?" to request a cookie.

2. Tact: A tact is labeling or describing something in the environment. It involves expressing nonverbal stimuli, objects, actions, events, or concepts. Examples include saying "tree" when seeing a tree or saying "red ball" when noticing a red ball.

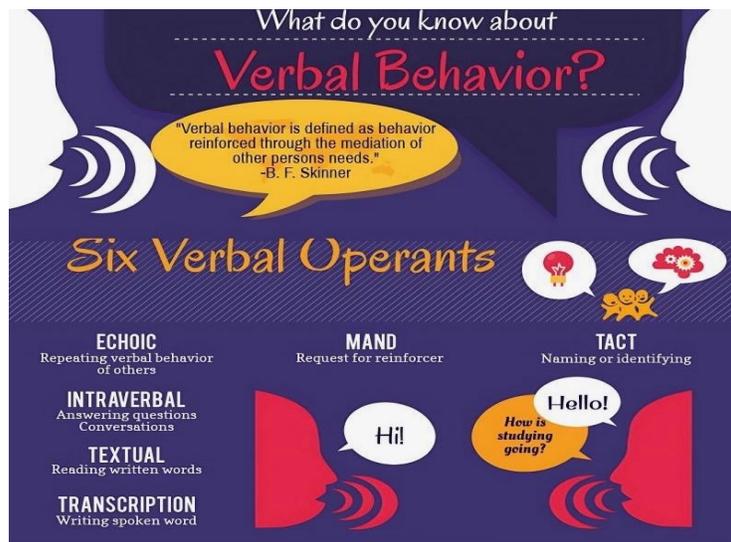
3. Intraverbal: An intraverbal is a conversation or response that is prompted by someone else's verbal behavior. It involves responding to questions, completing sentences, or engaging in back-and-forth discussions. Examples include answering questions like "What is your favorite color?" or filling in the missing word in a sentence.

4. Echoic: An echoic is the repetition or imitation of someone else's verbal behavior. It involves repeating what is heard. Examples include saying "apple" when someone says "apple" or repeating a phrase after someone says it.

Textual: In the framework of verbal operants defined by B.F. Skinner's theory of verbal behavior, "textual" describes a type of verbal response in which an individual reads or writes a word or phrase by visually recognizing written text. This means the person responds to a written stimulus with either a spoken or written response, exhibiting point-to-point correspondence. Importantly, this process does not require a complete understanding of the text's meaning; it primarily involves activities like reading aloud or transcribing written words

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Verbal Operant	Simple Definition	Example
Mand	A request for items, activities or information	Saying "banana" when you want a banana
Tact	Labelling or describing something	Saying "banana" just because you've saw a banana
Intraverbal	Answering questions/conversation skills	Saying "banana" when someone asks "What did you have for a snack"
Echoic	Vocal Imitation	Saying "banana" because someone else said "banana"
Textual	Reading	Saying "banana" because you saw the written word "banana"



### Verbal Operants

1. Point-to-Point Correspondence: A relationship where a unit of a verbal response matches a corresponding unit in another form (e.g., spoken word corresponding to written word).
2. Formal Similarity: Occurs when a verbal response resembles both the form and topography of another verbal form (e.g., saying "dog" and writing "dog" share formal similarity).
3. Transcribing: The process of writing down verbal behavior as it occurs; converting speech into text forms.

### Mands

1. Mand with Multiple Control: A verbal behavior influenced by various antecedent conditions (e.g., hunger and social cues prompting a request).

2. Convergent Control: A situation where multiple stimuli influence a single verbal response (e.g., asking for food in a restaurant influenced by hunger and sight of food).
3. Divergent Control: When a single stimulus results in multiple responses (e.g., the instruction "sit!" can result in sitting, laying down, or standing still).

#### Types of Mands

1. Regular Mand: Requests based on known motivations (e.g., "Can I have water?").
2. Pure Mand: Direct requests based on immediate needs or desires without ambiguity.
3. Impure Mand: Requests that contain elements of both demand and request or that are influenced by other operants.
4. Magical Mand: Requests made without a clear antecedent that may be based on wishful thinking.
5. Superstitious Mand: Behavior that occurs due to coincidental reinforcement (e.g., saying "abracadabra" believing it can produce an effect).
6. Solecistic Mand: Requests that contain grammatical errors or incorrect usage but are still understood.
7. Metaphorical Mand: Requests employing metaphorical language to convey desire (e.g., "I'm thirsty for knowledge").
8. Generic Extension: Generalizing a mand to apply to a broader category (e.g., using "soda" to refer to all carbonated drinks).

#### Listener Discrimination

Listener Discrimination: The ability of a listener to differentiate between verbal stimuli and respond appropriately.

Listening Behavior: The active engagement in interpreting and responding to verbal communication.

#### Auditory Responses

1. Simple Auditory: Basic responses to sound stimuli without complexity.

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2. Compound Auditory: Responses that involve integrating multiple sounds or cues.
3. Verbal Auditory: Specific responses based on hearing spoken language.
4. Function Altering: The effect of verbal behavior on the functions and meanings of stimuli within an individual's environment.

This overview highlights the essential definitions of each verbal operant and associated concepts for a foundational understanding in ABA.

### Autoclitics:

In applied behavior analysis (ABA), autoclitics are a type of verbal behavior that modify the form and function of other verbal behavior to provide additional information about the speaker's intent, emotional state, or the circumstances of the verbal behavior. The concept originates from B.F. Skinner's analysis of verbal behavior, where an autoclitic is a secondary verbal response that depends on the primary verbal response for its occurrence.

Autoclitics can alter or clarify the meaning of the primary verbal utterances in various ways, such as indicating the speaker's degree of certainty, the source of their knowledge, or their emotional state. They can also adjust the listener's response to any verbal behavior.

There are several types of autoclitics, including:

#### 1) Descriptive Autoclitics-

**Autoclitic Tacts:** These occur when a speaker comments on their own verbal behavior. For example, adding "I think" or "probably" modifies the listener's understanding of the speaker's certainty or confidence about their statement.

#### 2) Relational Autoclitics

These provide additional detail about the speaker's statements, enhancing clarity or specifying conditions. An example might be stating "The book on the table," where "on the table" clarifies which book is being referred to.

### 3) Qualifying Autoclitics:

Autoclitic Mands: These influence the listener's response by indicating the speaker's desire or need. For instance, saying "Could you please" in a request suggests politeness and softens the demand.

### 4) Quantifying autoclitics

This kind of verbal activity may be designated as a second sort of "autoclitic tact." The autoclitic activity here is controlled by properties of the antecedent circumstances that occasion the elementary verbal response. This kind of autoclitic activity affects the listener by indicating either a property of the speaker's behavior or the circumstances responsible for that property. Examples include such modifiers as few, many, some, all, all but, however, almost, always, perhaps, too. Articles such as the, this, that, and a are also quantifying autoclitics.

Each type of autoclitic serves to refine or provide context to the primary verbal behavior, making communication more precise and tailored to the listener's understanding.

## **B-20) Identify the role of multiple control in verbal behavior.**

### Identifying a Multiple in Verbal Behavior

Multiple Control is where a single response can function in various ways or serves multiple purposes in communication.

In the context of Skinner's analysis of verbal behavior, a "multiple" refers to instances where a single response can function in various ways or serves multiple purposes in communication. Identifying a multiple involves recognizing that a particular verbal behavior may be based on different controlling variables, reflecting different functions of language.

For example, the phrase "I want a cookie" can serve several functions depending on the context. It might function as a mand (a request) if the speaker is expressing a desire to obtain a cookie. It can also serve as a tact (labeling) if the individual is simply stating that a cookie is present and wants to draw attention to it. Additionally, it might act as a discriminative stimulus if the speaker uses it to prompt someone else to provide cookies in a situation where cookies are typically given.

Identifying multiples in verbal behavior requires careful observation of the context in which the behavior occurs, the antecedents that precede it, and the consequences that follow. Analyzing these elements allows practitioners and educators in applied behavior analysis (ABA) to better

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understand the different functions that a single verbal response can serve, leading to more effective communication strategies and intervention techniques.

### **B-21) Identify examples of processes that promote emergent relations and generative performance.**

#### Processes Promoting Emergent Relations and Generative Performance

In applied behavior analysis, emergent relations refer to the ability of an individual to derive new knowledge or skills based on previously learned behaviors without direct instruction. Generative performance involves the capacity to apply what has been learned in novel situations, demonstrating flexibility and creativity in behavior. Several processes can promote these outcomes:

**Conditional Discrimination Training:** This process involves teaching individuals to make specific responses based on different conditions or contexts. By establishing conditional relationships, learners can derive new relations between stimuli. For example, if a child learns that "red" is associated with a stop sign in one context and "green" with a go sign in another, they can generalize these concepts to other traffic signals, thus enhancing their understanding of traffic rules.

**Multiple Exemplar Training:** This approach involves exposing learners to multiple examples or variations of a concept or skill. By practicing the same response across different contexts or with varied stimuli, learners develop a more flexible understanding that supports generative performance. For instance, if a child is taught to request items using different phrases (e.g., "Can I have a toy?" or "I want a toy, please?"), they can apply this learning to novel situations, generating appropriate language in various contexts.

**Reinforcement of Spontaneous Responses:** Encouraging and reinforcing spontaneous verbal or behavioral responses can lead to emergent relations. When a child spontaneously uses a new word or behavior correctly without prompting, reinforcing that moment can strengthen the association. For example, if a child says "Can I play?" when encountering peers, reinforcing this spontaneous language promotes the likelihood of similar requests in the future and enhances their social interaction skills.

Role-Playing and Simulation: Engaging individuals in role-playing or simulated activities creates opportunities for practicing generative behavior in safe, controlled environments. For instance, practicing conversational skills through scripted dialogues allows learners to explore varied responses and scenarios, facilitating their ability to adapt these skills to real-life interactions.

**B-22) Identify ways behavioral momentum can be used to understand response persistence.**

Understanding Response Persistence through Behavioral Momentum

Behavioral momentum is a concept in applied behavior analysis that describes how the rate of reinforcement influences the persistence of a behavior. It is based on the analogy of physical momentum; once an object is in motion, it requires a significant force to stop it. In the context of behavior, once a behavior is established and reinforced, it becomes more resistant to change or extinction.

Here are several ways behavioral momentum can help understand response persistence:

**Initial High Rates of Reinforcement:** When a behavior is reinforced consistently and at high rates, it creates a strong momentum. For example, if a student receives frequent praise and rewards for completing homework, this initial positive reinforcement increases the likelihood that the student will continue this behavior, even when reinforcement decreases. Understanding this momentum helps educators design interventions that start with high rates of reinforcement before gradually diminishing them.

**Establishing Consistent Patterns:** By reinforcing small, manageable steps or behaviors leading to a larger goal, a pattern of response momentum can be established. For instance, reinforcing a child for completing short tasks or answering questions allows for the buildup of momentum that makes it more likely for the child to tackle larger tasks. This approach taps into the principle that previously reinforced behaviors are likely to persist even when faced with new challenges.

**Utilizing Behavior Momentum in Interventions:** Practitioners can leverage behavioral momentum in behavior modification strategies. For example, before asking a child to engage in a challenging task (like a complex math problem), a teacher might first have the child complete several easier, reinforcing tasks. This sequence creates momentum that increases the child's likelihood of persisting through more difficult challenges.

**Resistance to Extinction:** Behavioral momentum also provides insight into why some behaviors persist even when reinforcement is withdrawn. A behavior that has built up momentum through consistent reinforcement is likely to be more resistant to extinction. Understanding this can guide

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interventions by highlighting the need to maintain some level of reinforcement or support for behaviors that practitioners do not want to lose.

**Assessment of Response Variability:** Behavioral momentum can also be assessed by observing how changes in reinforcement affect response variability. If a behavior with high momentum begins to decline, practitioners can analyze the underlying factors—such as reduced reinforcement or environmental changes—that may need to be addressed to restore persistence

**B-23) Identify ways the matching law can be used to interpret response allocation.**

Evaluation of Reinforcement Schedules: The matching law allows practitioners to analyze how different reinforcement schedules influence response allocation. For instance, if a student receives a greater rate of reinforcement for participating in group activities compared to independent work, the matching law predicts that the student will allocate more responses toward group activities. Understanding this can help educators design effective reinforcement strategies that optimize desired behaviors.

Comparison of Alternative Behaviors: When presented with multiple options, the matching law helps interpret how animals or individuals distribute their responses based on the potential for reinforcement. For example, if a child is equally capable of performing two tasks but receives more reinforcement (such as praise or rewards) for one task, the matching law suggests they will allocate more responses to that task. This knowledge can inform behavior management strategies by emphasizing the importance of reinforcement for target behaviors.

Predicting Changes in Behavior: Changes in reinforcement conditions can be interpreted through the matching law to predict shifts in response allocation. For example, if a previously heavily reinforced option is diminished (such as reducing token rewards for a specific behavior), the matching law would predict that the individual will begin allocating more responses to other available options that still provide reinforcement. This helps behavior analysts anticipate and manage potential behavior changes resulting from alterations in reinforcement conditions.

Understanding Preference Development: The matching law can also explain how preferences are established over time. Repeated exposure to certain reinforcers can create a pattern where individuals consistently allocate more responses to these preferred options, leading to stronger preferences based on their past experiences with reinforcement. This understanding can guide interventions aimed at developing or altering preferences in individuals, such as introducing new reinforcement options that are appealing.

Behavioral Economics Insights: The matching law aligns closely with concepts in behavioral economics, helping analyze decision-making processes. By understanding how individuals allocate their responses to maximize reinforcement, practitioners can strategize interventions aimed at improving decision-making skills. This can be particularly useful in therapies that address impulsivity or maladaptive decision-making behaviors.

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In essence, the matching law offers a framework for interpreting how individuals allocate their responses based on available reinforcers. By understanding and applying this principle, ABA practitioners can effectively design interventions, predict shifts in behavior, and foster favorable outcomes in various learning and behavioral contexts.

### **B-24) Identify and distinguish between imitation and observational learning.**

In applied behavior analysis, both imitation and observational learning are essential concepts related to how individuals acquire new behaviors, but they differ in their processes and implications.

Imitation refers to the direct replication of a behavior that an individual has observed in another person (the model). In imitation, the observer performs the same behavior, often using similar physical movements, in response to seeing that behavior being performed. For example, if a child sees an adult clap their hands and then subsequently claps their hands in the same manner, this is an instance of imitation. Imitation is typically characterized by a close correspondence between the model's behavior and the observer's response, and it often occurs soon after the observation.

Observational Learning, on the other hand, is a broader concept that encompasses learning that occurs by watching others but does not necessarily involve direct imitation. It includes the understanding of the outcomes associated with a behavior, allowing the observer to learn without performing the exact actions. Observational learning involves processes like attention, retention, reproduction, and motivation. For instance, if a child watches an older sibling tie their shoes and understands the steps involved, they may later apply that knowledge to tie their own shoes, even if they did not immediately replicate the model's actions.

The distinction between the two concepts is important:

1. **Level of Fidelity:** Imitation requires a high level of fidelity to the observed behavior, while observational learning may not reflect a direct replication of the action but rather an understanding of the underlying principles.
2. **Cognitive Processing:** Observational learning often involves cognitive processes such as memory and reasoning, enabling individuals to extract information and apply it in various contexts. In contrast, imitation may not necessarily require deep cognitive involvement, as it can occur as a more instinctive response to seeing a behavior.
3. **Outcome Expectations:** Observational learning allows individuals to learn from the consequences of others' actions (vicarious reinforcement or punishment), which can influence their future behavior. In imitation, the focus is primarily on replicating the observed behavior without necessarily considering its outcomes.

4. Application: While imitation is typically relevant in early childhood development when children learn from those around them, observational learning plays an essential role in more complex learning situations, such as acquiring social skills, problem-solving strategies, or new tasks.

In summary, while both imitation and observational learning involve learning from others, they differ in their processes and implications. Imitation is about directly replicating observable behaviors, whereas observational learning encompasses a broader understanding of behaviors and their outcomes, allowing individuals to adapt and apply information in varied contexts. Understanding these distinctions is vital for developing effective teaching and intervention strategies in applied behavior analysis.

### **Quiz: Section B Concepts and Principals**

#### **1. What is the definition of "behavior" in the context of behavior analysis?**

- A) A response to a stimulus that is not observable
- B) Any observable and measurable action
- C) A mental process that cannot be measured
- D) A reaction that does not involve learning

#### **2. How would you define a "response"?**

- A) A subset of behavior defined by a specific action
- B) Any outcome resulting from behavior
- C) A cumulative effect of various behaviors
- D) A stimulus that elicits a reaction

#### **3. A "response class" includes:**

- A) All behaviors that are reinforced by the same consequence
- B) Only behaviors within a specific context
- C) Behaviors dictated by external stimuli

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D) All observable actions regardless of reinforcement

### 4. Which statement best defines a "stimulus class"?

A) A group of stimuli that evoke the same response

B) A single discrete stimulus

C) Stimuli that have no relationship to each other

D) Stimuli that has relationship to each other

### 5. Respondent conditioning is characterized by:

A) Learning through reinforcement

B) Association of an unconditioned stimulus with a conditioned stimulus

C) Learning through punishment

D) Teaching skills in academic settings

### 6. Which of the following describes operant conditioning?

A) Behavior is shaped by the consequences that follow it

B) Behavior is learned only through observation

C) Behavior occurs without any consequences

D) Behavior is not learned through observation

### 7. Positive reinforcement involves:

A) Removing an aversive stimulus to increase behavior

B) Presenting a pleasant stimulus to increase behavior

C) Adding an unpleasant stimulus to decrease behavior

D) Ignoring behavior to stop it

**8. Negative reinforcement involves:**

- A) Adding a stimulus to increase behavior
- B) Removing a stimulus to decrease behavior
- C) Removing an aversive stimulus to increase behavior
- D) Presenting a punishment to discourage behavior

**9. Positive punishment happens when:**

- A) A positive outcome follows a behavior
- B) An aversive stimulus is added to decrease behavior
- C) A pleasant stimulus is withheld
- D) Behavior is ignored

**10. Negative punishment is characterized by:**

- A) Adding a stimulus to decrease behavior
- B) Removing a pleasant stimulus to decrease behavior
- C) Increasing behavior by adding a reward
- D) Ignoring desired behavior

**11. Automatic contingencies are defined as:**

- A) Consequences provided to the individual by others
- B) Consequences that occur without any social input
- C) Behavioral consequences based on peer feedback
- D) All contingencies presented by authority figures

**12. Which of the following describes a conditioned reinforcer?**

- A) A primary reinforcer that is intrinsically valuable
- B) A stimulus that acquires its reinforcing properties through association
- C) A natural reinforcer present from birth

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D) A punisher that only affects behavior temporarily

### 13. Generalized reinforcers are characterized by:

- A) Being effective only in specific contexts
- B) Being paired with multiple unconditioned or conditioned reinforcers
- C) Acting as punishing stimuli
- D) Having no impact on behavior

### 14. Which of the following is a characteristic of simple schedules of reinforcement?

- A) They involve multiple variables
- B) They deliver reinforcement based on a specific criterion
- C) They require complex responses
- D) They can only be used in group settings

### 15. What distinguishes a concurrent schedule of reinforcement?

- A) Two or more behaviors are reinforced independently
- B) Only one behavior is reinforced at a time
- C) Behaviors are reinforced based on a fixed interval
- D) Behaviors must be completed in a specific order

### 16. What is operant extinction?

- A) The removal of a reinforcer following a behavior to decrease its occurrence
- B) The physical removal of the individual from a situation
- C) The introduction of new reinforcement strategies
- D) The immediate increase in behavior after reinforcement is removed

### 17. Respondent extinction refers to:

- A) The repeated presentation of the unconditioned stimulus alone
- B) The gradual reduction of a learned response due to the absence of reinforcement
- C) The stopping of reinforcing a previously reinforced behavior
- D) The introduction of new behaviors that replace old ones

**18. An example of stimulus control includes:**

- A) A child only saying "please" when asking a parent for a toy
- B) A student maintaining the same grade regardless of study habits
- C) A behavior that occurs randomly without any specific cue
- D) A behavior displayed in any environment

**19. Stimulus discrimination refers to:**

- A) The ability to respond differently to different stimuli
- B) The inability to distinguish between two similar stimuli
- C) The process by which a stimulus loses its reinforcing properties
- D) The occurrence of similar responses to different stimuli

**20. Response generalization occurs when:**

- A) A behavior is learned in one context but not in another
- B) The same response occurs in different contexts or with different stimuli
- C) A person learns several behaviors at once
- D) A behavior is consistently reinforced across multiple environments

**ASSIGNMENT**

Applied Supervision Assignment Plan, revised to include one required video assignment per section of the BACB 6th Edition Task List. These video tasks are designed to demonstrate applied competence and support mastery through direct modeling or verbal explanation.

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## Section B: Concepts and Principles

### 1. 4-Term Contingency Application

Use real session data to identify MO, SD, behavior, and consequence.

### 2. Reinforcement Procedure & Graphing

Implement reinforcement and graph data to demonstrate behavior change.

### 3. Behavioral Definition and Conditioning

Write a definition and classify it as operant or respondent behavior.

### 4. Rule-Governed vs. Contingency-Shaped Behavior

Develop examples of each using client case studies.

Video Assignment:

“Teaching the 4-Term Contingency” – Record yourself explaining the 4-term contingency to a parent or new RBT, using visuals, a mock session, or real anonymized data examples.

## Section B

### Books

#### (Primary Sources)

1. Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). Applied behavior analysis (3rd ed.). Pearson.

(Primary text for all concepts like reinforcement, punishment, extinction, stimulus control, MOs, SD's, SΔs, etc.)

2. Pierce, W. D., & Cheney, C. D. (2017). Behavior analysis and learning (6th ed.). Routledge.

(Goes deeper into respondent conditioning, stimulus control, compound schedules, and generalization.)

3. Michael, J. (1993). Establishing operations. *The Behavior Analyst*, 16(2), 191–206.  
<https://doi.org/10.1007/BF03392677>  
  
(Key source for motivating operations — setting events, value-altering effects, behavior-altering effects.)
4. Skinner, B. F. (1938). *The behavior of organisms: An experimental analysis*. Appleton-Century.  
  
(Primary for respondent and operant conditioning basics.)
5. Skinner, B. F. (1953). *Science and human behavior*. Macmillan.  
  
(Explains reinforcement, punishment, extinction, generalization, and discrimination in natural environments.)

## **Journal Articles**

### **(Critical Concepts)**

1. Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis*, 1(1), 91–97.  
<https://doi.org/10.1901/jaba.1968.1-91>  
  
(Source for generalization and concept of effectiveness.)
2. Michael, J. (2004). Concepts and principles of behavior analysis. *The Behavior Analyst Today*, 5(3), 362–365.  
  
(Concise summary of behavior analytic concepts, including reinforcement and punishment processes.)
3. Sidman, M. (1960). *Tactics of scientific research: Evaluating experimental data in psychology*. Basic Books.  
  
(Source for stimulus control, stimulus equivalence, and discrimination training.)

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## Webpages

### (Supporting, Simplified, or Quick-Reference Sources)

1. Behavior Analyst Certification Board (BACB). (2022). BCBA 6th Edition Task List and Content Outline.

<https://www.bacb.com/bcba-6th-edition-task-list/>

(Defines expectations for reinforcement, punishment, motivating operations, extinction, stimulus control, etc.)

2. Association for Behavior Analysis International (ABAI). (n.d.). What is Behavior Analysis?

<https://www.abainternational.org/about-us/about-behavior-analysis.aspx>

(Reinforcement, punishment, extinction, stimulus control explained accessibly.)

3. Cambridge Center for Behavioral Studies. (n.d.). Behavior Analysis: A Brief Overview.

<https://behavior.org/behavior-analysis/>

(Good lay explanations of reinforcement and punishment basics.)

4. University of West Florida (UWF) ABA Program. (n.d.). Concepts and Principles of Behavior Analysis.

(UWF had some content directly teaching respondent vs operant behavior, motivating operations, schedules.)

## KEY DEFINITIONS SECTION B

### **Abative effect (of a motivating operation)**

A decrease in the current frequency of behavior that has been reinforced by some stimulus, object, or event whose reinforcing effectiveness depends on the same motivating operation.

For example, food ingestion abates (decreases the current frequency of) behavior such as opening the fridge that has been reinforced by food.

**Abolishing operations (AO)**

A motivating operating that decreases the reinforcing effectiveness of a stimulus, object, or event. For example, the reinforcing effectiveness of food is abolished as a result of food ingestion.

**Alternative schedule (alt)**

Provides reinforcement when the response requirements of any of two or more simultaneously available component schedules are met.

**Arbitrary stimulus Class**

Antecedent stimuli that evoke the same response but do not resemble each other in physical form or share a relational aspect such as bigger or under (e.g., peanuts, cheese, coconut milk, and chicken breasts are members of an arbitrary stimulus class if they evoke the response “sources of protein”).

**Autoclitic Tact**

An autoclitic tact is controlled by some nonverbal feature of the primary response or its controlling variables, and the autoclitic response informs the listener of that feature. This behavior is reinforced by listeners who provide generalized reinforcement.

**Automatic contingencies**

Skinner used “automatic” to identify circumstances in which behavior is evoked, shaped, maintained, or weakened by environmental variables occurring without direct manipulation by other people. All behavioral principles (e.g., reinforcement, extinction, punishment) can affect our behavior automatically.

**Automatic punishment**

Punishment that occurs independent of the social mediation by others (i.e., a response product serves as a punisher independent of the social environment).

**Automatic reinforcement**

Reinforcement that occurs independent of the social mediation of others (e.g., scratching an insect bite relieves the itch).

**Aversive stimulus (or negative reinforcer)**

In general, an unpleasant or noxious stimulus; more technically, a stimulus change or condition that functions (a) to evoke a behavior that has terminated it in the past, (b) as a punisher when presented following behavior, and/or (c) as a reinforcer when withdrawn following behavior.

**Behavior**

That portion of an organism's interaction with its environment that involves movement of some part of the organism.

**Behavior-altering effect (of a motivating operation)**

Either (a) an increase in the current frequency of behavior that has been reinforced by some stimulus, object, or event, called an evocative effect; or (b) a decrease in the current frequency of behavior that has been reinforced by some stimulus, object, or event, called an abative effect. For example, the current frequency of behavior that has been reinforced with food, such as opening the fridge, is evoked (increased) or abated (decreased) by food deprivation or food ingestion, respectively.

**Behavioral momentum**

Describes the resistance to change in a behavior's rate of responding following an alteration in reinforcement conditions. The momentum metaphor has also been used to describe the effects produced by the high probability request sequence.

**Chained schedule (chain)**

A schedule of reinforcement in which the response requirements of two or more basic schedules must be met in a specific sequence before reinforcement is delivered; a discriminative stimulus is correlated with each component of the schedule.

**Codic**

A type of verbal behavior where the form of the response is under the functional control of a verbal stimulus with point-to-point correspondence, but without formal similarity. There is also a history of generalized reinforcement.

**Common bidirectional naming (C-BiN)**

A higher order, verbal cusp consisting of the fusing together of the speaker and listener repertoires and by directional relations. A new word acquired as listener can generate a tact without further training, and a new word acquired as a tact can generate a listener relation without further training (these effects are consistent with emergent symmetry and mutual entailment).

Two or more elements of continuous reinforcement (CRF), the four intermittent schedules of reinforcement (FR, VR, FI, VI), differential reinforcement of various rate of responding (DRH, DRL), and extinction. The elements from these basic schedules can occur successively or simultaneously and with or without discriminative stimuli; reinforcement may be contingent on meeting the requirements of each element of the schedule independently or in combination with all elements.

**Concurrent schedule (conc)**

A schedule of reinforcement in which two or more contingencies of reinforcement (elements) operate independently and simultaneously for two or more behaviors.

**Conditioned motivating operations (CMOs)**

A motivating operation whose value-altering effect depends on a learning history. For example, because of the relation between locked doors and keys, having to open a locked door is a CMO that makes keys more effective as reinforcers, and evokes behavior that has obtained such keys.

**Conditioned punisher**

A previously neutral stimulus change that functions as a punisher because of prior pairing with one or more other punishers. Also known as a secondary or learned punisher.

**Conditioned reflex**

A learned stimulus-response functional relation consisting of an antecedent stimulus (e.g., sound of the refrigerator door opening) and the response it elicits (e.g., salivation); each person's repertoire of conditioned reflexes is the product of his or her history of interactions with the environment (ontogeny).

**Conditioned reinforcer**

A stimulus change that functions as a reinforcer because of prior pairing with one or more other reinforcers. Also known as secondary or learned reinforcer.

**Conditioned stimulus (CS)**

The stimulus component of a conditioned reflex; a formerly neutral stimulus change that elicits respondent behavior only after it has been paired with an unconditioned stimulus (US) or another CS.

**Conjunctive schedule (conj)**

A schedule of reinforcement that is in effect whenever reinforcement follows the completion of response requirements for two or more schedules of reinforcement.

**Contingency-shaped behavior**

Behavior acquired by direct experience with contingencies.

**Continuous reinforcement (CRF)**

A schedule of reinforcement that provides reinforcement for each occurrence of the target behavior.

**Convergent multiple control**

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Occurs when a single verbal response is a function of more than one variable (e.g., what is said has more than one antecedent source of control).

### **Copying text**

An elementary verbal operant involving a written response that is evoked by a written verbal discriminative stimulus that has formal similarity and a history of generalized reinforcement.

### **Discriminative stimulus (SD)**

A stimulus in the presence of which a given behavior has been reinforced and in the absence of which that behavior has not been reinforced; as a result of this history, an  $S^D$  evokes operant behavior because its presence signals the availability of reinforcement.

### **Divergent multiple control**

This occurs when a single antecedent variable affects the strength of more than one response.

### **Duplic**

A type of verbal behavior where the form of the response is under the functional controls of a verbal stimulus with formal similarity, and a history of generalized reinforcement.

### **Echoic**

An elementary verbal operant involving a vocal response that is evoked by a vocal verbal  $S^D$  that has formal similarity between an auditory verbal stimulus and an auditory verbal response product, and a history of generalized reinforcement.

### **Emergent stimulus relations**

Stimulus relations that are not taught directly but emerge as an indirect function of related instruction or experience. Also called derived stimulus relations.

### **Establishing operation (EO)**

A motivating operation that increases the effectiveness of some stimulus, object, or event as a reinforcer. For example, food deprivation establishes food as an effective reinforcer.

### **Evocative effect (of a motivating operation)**

An increase in the current frequency of behavior that has been reinforced by some stimulus, object, or event whose reinforcing effectiveness depends on the same motivating operation. For example, food deprivation evokes (increases the current frequency of) behavior such as opening the fridge that has been reinforced by food.

### **Feature stimulus class**

Stimuli that share common physical forms or structures (e.g., made from wood, four legs, round, blue) or common relative relationships (e.g., bigger than, hotter than, higher than, next to).

**Fixed interval (FI)**

A schedule of reinforcement in which reinforcement is delivered for the first response emitted following the passage of a fixed duration of time since the last response was reinforced (e.g., on an FI 3-min schedule, the first response following the passage of 3 minutes is reinforced).

**Fixed ratio (FR)**

A schedule of reinforcement requiring a fixed number of responses for reinforcement (e.g., an FR 4 schedule of reinforcement follows every fourth response)

**Formal Similarity:** Occurs when the controlling antecedent stimulus and the response or response product (a) share the same sense mode (e.g., both stimulus and response are visual, auditory, or tactile) and (b) physically resemble each other. Verbal relations with formal similarity are echoic, copying a text, and imitation as it relates to sign language.

**Function-altering effect(relevant to operant relations)**

A change in an organism's repertoire of MO, stimulus, and response relations, caused by reinforcement, punishment, an extinction procedure, or a recovery from punishment procedure. Respondent function-altering effects result from the pairing and unpairing of antecedent stimuli.

**Generalized conditioned punisher**

A conditioned punisher that, as a result of having been paired with many other punisher, does not depend on an establishing operation for any particular form of punishment for its effectiveness.

**Generative learning**

A behavioral effect whereby previously acquired speaker and listener skills enable or accelerate the acquisition of other speaker and listener skills, without dependence on direct teaching or a history of reinforcement.

**High-probability instructional sequence (high-p)**

A procedure for improving compliance and diminishing escape-maintained problem behaviors. The practitioner presents two to five easy to-follow (high-p) instructions for which the participant has a history of compliance. When the learner complies with several high-p instructions, the practitioner immediately presents a target instruction (i.e., low-p).

**Higher-order conditioning**

Development of a conditioned reflex by pairing of a neutral stimulus (NS) with a conditioned stimulus (CS).

**Imitation**

Behavior that (a) is occasioned by another person's model of the behavior (or symbolic representation thereof), (b) has formal similarity with the model, (c) follows the modeled behavior closely in time, and (d) the model is the primary controlling variable for the imitative

behavior. An imitative behavior is a new behavior emitted following a novel antecedent event (i.e., the model).

**Intermittent schedule of reinforcement (INT)**

A contingency of reinforcement in which some, but not all, occurrences of the behavior produce reinforcement.

**Intraverbal**

An elementary verbal operant involving a response that is evoked by a verbal discriminative stimulus that does not have point-to-point correspondence with that verbal stimulus. The intraverbal is the opposite of the echoic, in that the words emitted by one speaker do not match the words of another speaker. Intraverbal behavior constitutes the basis for social interaction, conversations, and much of academic and intellectual behavior. Questions are mands, and answers are intraverbal.

**Joint control**

A phenomenon in which two separate, but interrelated forms of a person's own verbal behavior, combine to acquire stimulus control of a response that would not have occurred in the absence of either.

**Listener responding (or listener discriminations)**

When a verbal  $S^D$  evokes a specific nonverbal behavior, due to a history of reinforcement.

**Mand-**

An elementary verbal operant involving a response of any form that is evoked by an MO and followed by specific reinforcement. Manding allows a speaker to get what she wants or refuse what she does not want.

**Matching law**

The allocation of responses to choices available on concurrent schedules of reinforcement; rates of responding across choices are distributed in proportions that match the rates of reinforcement received from each choice alternative.

**Matching-to-sample (MTS) procedure**

A discrete trial procedure for investigating conditional relations and stimulus equivalence. A matching-to-sample trial begins with the participant making a response that presents or reveals the sample stimulus; next, the sample stimulus may or may not be removed, and two or more comparison stimuli are presented. The participant then selects one of the comparison stimuli. Responses that select a comparison stimulus that matches the sample stimulus are reinforced; no reinforcement is provided for responses selecting the nonmatching comparison stimuli.

**Mixed schedule (mix)**

A compound schedule of reinforcement consisting of two or more basic schedules of reinforcement (elements) that occur in an alternating, usually random, sequence; no discriminative stimuli are correlated with the presence or absence of each element of the schedule, and the reinforcement is delivered for meeting the response requirements of the element in effect at any time.

#### Motivating operations (MO)

An environmental variable that (a) alters (increases or decreases) the reinforcing or punishing effectiveness of some stimulus, object, or event; and (b) alters (increases or decreases) the current frequency of all behavior that has been reinforced or punished by that stimulus, object, or event.

#### Motor imitation

A type of duplic verbal behavior in which the form of a motor response is under the functional control of a visual verbal  $S^D$  that has formal similarity between a verbal stimulus and a verbal response product, and a history of generalized reinforcement.

#### Multiple schedule (mult)

A compound schedule of reinforcement consisting of two or more basic schedules of reinforcement (elements) that occur in an alternating, usually random, sequence; a discriminative stimulus is correlated with the presence or absence of each element of the schedule, and reinforcement is delivered for meeting the response requirements of the element in effect at any time.

#### Negative punishment

A response behavior followed immediately by the removal of a stimulus (or a decrease in the intensity of the stimulus) that results in similar responses occurring less often.

#### Negative reinforcement

A contingency in which the occurrence of a response is followed immediately by the termination, reduction, postponement, or avoidance of a stimulus, and which leads to an increase in the future occurrence of similar responses.

#### Neutral stimulus (NS)

A stimulus change that does not elicit respondent behavior.

#### Observational learning

This entails detecting another person's behavior and its consequence(s) and using that information to determine whether or not to imitate the behavior.

#### Operant behavior

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Behavior that is selected, maintained, and brought under stimulus control as a function of its consequences; each person's repertoire of operant behavior is a product of his history of interactions with the environment (ontogeny).

### Operant conditioning

The basic process by which operant learning occurs; consequences (stimulus changes immediately following responses) result in an increased (reinforcement) or decreased (punishment) frequency of the same type of behavior under similar motivational and environmental conditions in the future.

### Operant extinction

The process of decreasing behaviors entirely by withholding reinforcement in the presence of those behaviors.

### Point-to-point correspondence

A relation between the stimulus and response or response product that occurs when the beginning, middle, and end of the verbal stimulus matches the beginning, middle, and end of the verbal response. The verbal relations with point-to-point correspondence are echoic, copying text, imitation as it relates to sign language, textual and transcription.

### Positive punishment

A response followed immediately by the presentation of a stimulus that decreases the future frequency of the behavior.

### Positive reinforcement

A response followed immediately by the presentation of a stimulus change that results in similar responses occurring more often.

### Positive reinforce

A stimulus whose presentation or onset functions as reinforcement.

### Punisher

A stimulus change that decreases the future occurrence of behavior that immediately precedes it.

### Punishment

A basic principle of behavior describing a response-consequence functional relation in which a response is followed immediately by a stimulus change that decreases future occurrences of that type of behavior.

### Recombinative generalization

"Differential responding to novel combinations of stimulus components that have been included previously in other stimulus contexts" (Goldstein, 1983)

**Reflexivity**

A type of stimulus-to-stimulus relation in which the learner, without any prior training or reinforcement for doing so, selects a comparison stimulus, that is the same as the sample stimulus (e.g.,  $A = A$ ).

**Reinforcement**

A basic principle of behavior describing a response-consequence functional relation in which a response is followed immediately by a stimulus change that results in similar responses occurring more often.

**Reinforcer**

A stimulus change that increases the future frequency of behavior that immediately precedes it.

**Relational frame theory (RFT)**

A theory of derived stimulus relations proposing that stimulus relations are inherently verbal, and that accumulated experience with relational exemplars creates generalized repertoires of relating.

**Repertoire**

All of the behaviors a person can do; or a set of behaviors relevant to a particular setting or task (e.g., gardening, mathematical problem solving).

**Respondent behavior**

The response component of a reflex; behavior that is elicited, or induced, by antecedent stimuli.

**Respondent conditioning**

A stimulus-stimulus pairing procedure in which a neutral stimulus (NS) is presented with an unconditioned stimulus (US) until the neutral stimulus becomes a conditioned stimulus that elicits the conditioned response.

**Response**

A single instance or occurrence of a specific class or type of behavior. Technical definition: an “action of an organism’s effector. An effector is an organ at the end of an efferent nerve fiber that is specialized for altering its environment mechanically, chemically, or in terms of other energy changes.” (Michael, 2004)

**Respondent extinction**

The repeated presentation of a conditioned stimulus (CS) in the absence of the unconditioned stimulus (US); the CS gradually loses its ability to elicit the conditioned response until the conditioned reflex no longer appears in the individual’s repertoire.

**Response class**

A group of responses of varying topography, all of which produce the same effect on the environment.

**Response generalization**

The extent to which a learner emits untrained responses that are functionally equivalent to the trained target behavior.

**Response maintenance**

The extent to which a learner continues to perform the target behavior after a portion or all of the intervention responsible for the behavior's initial appearance in the learner's repertoire has been terminated.

**Response topography**

The physical shape or form of a behavior.

**Rule-governed behavior**

A behavior controlled by a rule (i.e., a verbal statement of an antecedent-behavior-consequence contingency); enables human behavior (e.g., fastening a seat belt) to come under the indirect control of temporally remote or improbable, but potentially significant consequences (e.g., avoiding injury in an auto accident). Often used in contrast to contingency shaped behavior, a term used to indicate behavior selected and maintained by controlled, temporally close consequences.

**Socially mediated contingency**

A contingency in which an antecedent stimulus and/or the consequences for the behavior is presented by another person.

**Stimulus**

“An energy change that affects an organism through its receptor cells.” (Michael, 2004)

**Stimulus class**

A group of stimuli that share specified common elements along formal (e.g., size, color), temporal (e.g., antecedent or consequent), and/or functional (e.g., discriminative stimulus) dimensions.

**Stimulus control**

A situation in which the frequency, latency, duration, or amplitude of a behavior is altered by the presence or absence of an antecedent stimulus.

**Stimulus Delta(S)**

A stimulus in the presence of which a given behavior has not produced reinforcement, or has produced reinforcement of lesser quality, in the past.

**Stimulus discrimination**

This is when one stimulus (the  $S^D$ ) signals the availability of reinforcement and the absence of that stimulus (the  $S^I$ ) signals a zero or reduced chance of reinforcement, responses will occur more often in the presence of the  $S^D$  than in its absence (the  $S^I$ ).

**Stimulus equivalence**

The emergence of accurate responding to untrained and non-reinforced stimulus-stimulus relations, following the reinforcement of responses to some stimulus relations. Requires successful performances on three types of probe trials – reflexivity, symmetry, and transitivity – in the absence of reinforcement. Also called equivalence class formation.

**Stimulus generalization**

This is when an antecedent stimulus has a history of evoking a response that has been reinforced in its presence, the same type of behavior tends to be evoked by stimuli that share similar physical properties with the controlling antecedent stimulus.

**Stimulus-stimulus pairing**

A procedure in which two stimuli are presented at the same time, usually repeatedly for a number of trials, which often results in one stimulus acquiring the function of the other stimulus.

**Symmetry**

A type of stimulus-to-stimulus relationship in which the learner, without prior training or reinforcement for doing so, demonstrates the reversibility of matched sample and comparison stimuli (e.g., if  $A = B$ , then  $B = A$ ).

**Tact**

An elementary verbal operant involving a response that is evoked by a nonverbal discriminative stimulus and followed by generalized conditioned reinforcement. Tacting allows a speaker to identify or describe the features of the physical environment. The elements that make up one's physical environment are vast; thus, much of language instruction and educational programs focus on teaching tacts.

**Taking dictation:**

This is an elementary verbal operant involving a spoken verbal stimulus that evokes a written, typed, or finger spelled response that does not have formal similarity between the stimulus and response, but does have point-to-point correspondence and history of generalized reinforcement.

**Tandem schedule (tand)**

A schedule of reinforcement identical to the chained schedule except, like the mix schedule, the tandem schedule does not use discriminative stimuli with the elements in the chain.

**Textual**

An elementary verbal operant involving a response that is evoked by a written verbal discriminative stimulus that does not have formal similarity between the stimulus and the response, but does have point-to-point correspondence and a history of generalized reinforcement.

**Transitivity**

This describes derived stimulus-stimulus relations

(e.g.,  $A=C$ ) that emerge as a product of training two other stimulus-stimulus relations ( $A=B$  and  $B=C$ ).

**Unconditioned motivating operation (UMOs)**

A motivating operation whose value-altering effect does not depend on a learning history. For example, food deprivation increases the reinforcing effectiveness of food without the necessity of any learning history.

**Unconditioned punisher**

A stimulus change that decreases the frequency of any behavior that immediately precedes it irrespective of the organism's learning history with the stimulus. Unconditioned punishers are products of the evolutionary development of the species (phylogeny), meaning that all members of a species are more or less susceptible to punishment by the presentation of unconditioned punishers. Also known as primary or unlearned punishers.

**Unconditioned reinforcer**

A stimulus change that increases the frequency of any behavior that immediately precedes it irrespective of the organism's learning history with the stimulus. Unconditioned reinforcers are the product of the evolutionary development of the species (phylogeny). Also known as primary or unlearned reinforcer.

**Unconditioned stimulus (US)**

The stimulus component of an unconditioned reflex; a stimulus change that elicits respondent behavior without any prior learning.

**Value-altering effect (of a motivating operation)**

Either (a) an increase in the reinforcing effectiveness of some stimulus, object, or event, in which case the MO is an establishing operation (EO); or (b) a decrease in reinforcing effectiveness, in which case the MO is an abolishing operation (AO). For example, the reinforcing effectiveness of food is altered as a result of food deprivation and food ingestion.

**Variable interval (VI)**

A schedule of reinforcement that provides reinforcement for the first correct response following the elapse of variable durations of time occurring in a random or unpredictable order. The mean duration of the intervals is used to describe the schedule (e.g., on a VI 10-min schedule, reinforcement is delivered for the first response following an average of 10 minutes since the last

reinforced response, but the time that elapses following the last reinforced response might range from 30 seconds or less to 25 minutes or more).

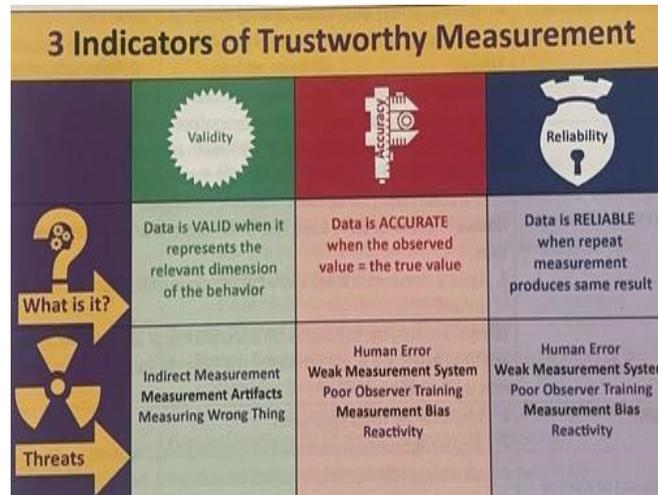
**Variable ratio (VR)**

A schedule of reinforcement requiring a varying number of responses for reinforcement. The number of responses required varies around a random number; the mean number of responses required for reinforcement is used to describe the schedule (e.g., on a VR 10 schedule an average of 10 responses must be emitted for reinforcement, but the number of responses required following the last reinforced response might range from 1 to 30 or more

**C. Measurement, Data Display, and Interpretation**

C.1. Create operational definitions of behavior.
C.2. Distinguish among direct, indirect, and product measures of behavior.
C.3. Measure occurrence.
C.4. Measure temporal dimensions of behavior (e.g., duration, latency, inter-response time).
C.5. Distinguish between continuous and discontinuous measurement procedures.
C.6. Design and apply discontinuous measurement procedures (e.g., interval recording, time sampling).
C.7. Measure efficiency (e.g., trials to criterion, cost-benefit analysis, training duration).
C.8. Evaluate the validity and reliability of measurement procedures.
C.9. Select a measurement procedure to obtain representative data that accounts for the critical dimension of the behavior and environmental constraints.
C.10. Graph data to communicate relevant quantitative relations (e.g., equal-interval graphs, bar graphs, cumulative records).
C.11. Interpret graphed data.
C.12. Select a measurement procedure to obtain representative procedural integrity data that accounts for relevant dimensions (e.g., accuracy, dosage) and environmental constraints.

C: Measurement, Data, Display and Interpretation:



**C-1) Establish operational definitions of behavior.**

Establishing operational definitions of behavior involves defining behaviors in clear, observable, and measurable terms. It allows researchers or observers to objectively identify and record specific behaviors, ensuring consistency and reliability in data collection and analysis.

Here are the steps involved in establishing operational definitions of behavior:

1. Identify the behavior: Determine the specific behavior you want to define and observe. It should be something that can be objectively observed and measured.
2. Describe the behavior: Clearly describe the behavior using precise and unambiguous terms. Avoid vague or subjective language that could lead to different interpretations. Use specific actions, gestures, verbalizations, or other observable indicators.
3. Specify the measurement criteria: Determine how the behavior will be measured or quantified. This could involve counting the frequency of the behavior (e.g., the number of times it occurs within a specific time period) or measuring its duration (e.g., how long the behavior lasts).
4. Train observers: If multiple observers will be involved, provide them with clear instructions and training on how to identify and record the defined behavior consistently. This helps ensure inter-observer reliability.

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5. Pilot testing: Before conducting the actual observation or data collection, conduct a pilot test to refine the operational definition and ensure its clarity and effectiveness. This can help identify any ambiguities or inconsistencies that need to be addressed.

6. Conduct observations: Implement the established operational definition by observing and recording the behavior according to the defined criteria. Collect data consistently across different settings and individuals.

7. Analyze and interpret data: Once data is collected, analyze the results using appropriate statistical or qualitative methods to draw meaningful conclusions about the behavior being studied.

Examples of operational definitions of maladaptive behaviors. These are not real students and the names and situations do not depict real people or situations, but are an example of how they are used in real situations.

Aggression: Any instance of John Doe making physical contact with another person using his body or an object with enough force to cause an audible sound and/or leave a visible mark on the skin.

Examples Include:

- Biting-teeth making contact with any part of the skin, constricting and leaving a mark
- Hitting-using a hand or arm with a closed or open fist to hit (making forceful physical contact) with another person masteraba.com
- Kicking- using the foot/feet or leg/legs to make contact with another person
- Throwing objects – any instance of him throwing items that are not designed to be thrown with enough force that the object makes physical contact with another person's body making a sound on contact (not upon the object coming in contact with the floor) and/or leaving a mark on the person's skin

Non-Examples Include:

- Giving a high five
- Hugging

- Common social physical interactions
- Saliva leaving his mouth as a result of talking or yelling

## SELF-INJURIOUS BEHAVIOR

Self-Injurious Behavior: Any instance in which Liam engages in any of the following: hitting self, pinching self, and banging head on surface, slapping or biting self with sufficient force to make a sound and/or leave a mark.

Examples Include:

- Banging the front or back of his head on a hard surface.
- Hitting his head with his hands. • Pinching his legs, arms or cheeks between his thumb and forefinger.
- Biting his hand, arm or leg by placing teeth on skin and compressing with sufficient force to leave a mark.

Non-Examples Include:

- Bumping his head on the ground when flopping to the floor.
- Banging his open hand on a table or hard surface. Alternatively, you might choose to topographically define just one form of self-injurious behavior if the child isn't prone to multiple topographies or if you plan to treat different topographies separately

Questions on operational definitions of behavior:

1. How can operational definitions of behavior enhance the reliability and validity of research findings?
2. What are some challenges that researchers may encounter when establishing operational definitions of complex or abstract behaviors? How can these challenges be addressed?

**C-2) Distinguish among direct, indirect, and product measures of behavior.**

In the field of behavioral research, there are three main types of measures used to assess behavior: direct measures, indirect measures, and product measures. Here's a brief explanation of each:

1. Direct measures: Direct measures involve observing and recording the behavior as it occurs in real-time. These measures rely on direct observation by an observer or researcher. Examples of direct measures include counting the number of times a specific behavior occurs, timing the duration of a behavior, or rating the intensity of a behavior on a scale. Direct measures provide the most immediate and unfiltered information about behavior but may be subject to observer bias or reactivity (where the presence of an observer influences the behavior).

2. Indirect measures: Indirect measures assess behavior by using proxy indicators or self-reports rather than direct observation. These measures rely on participants' or individuals' subjective reports or interpretations of their own behavior or the behavior of others. Examples of indirect measures include questionnaires, surveys, interviews, or rating scales where individuals report on their thoughts, feelings, or past behaviors. Indirect measures can provide valuable insights into internal experiences or perceptions, but they are subjective and may be influenced by biases or memory limitations.

## Indirect and Direct Data Collection

### Indirect Assessment

- Interviews with other adults and teachers
- Anecdotal notes of observations
- Student Interviews
- Warning:** While indirect assessment can provide additional and helpful information to your study it is not as reliable as direct observation.

### Direct Assessment

- Direct observation of the problem behavior and the conditions surrounding the behavior. This includes the antecedent and consequence.

3. Product measures: Product measures involve examining the tangible outcomes, artifacts, or results of behavior rather than directly observing the behavior itself. These measures focus on the physical or environmental traces left behind by behavior. Examples of product measures include analyzing written documents, artistic creations, test scores, or physiological markers. Product

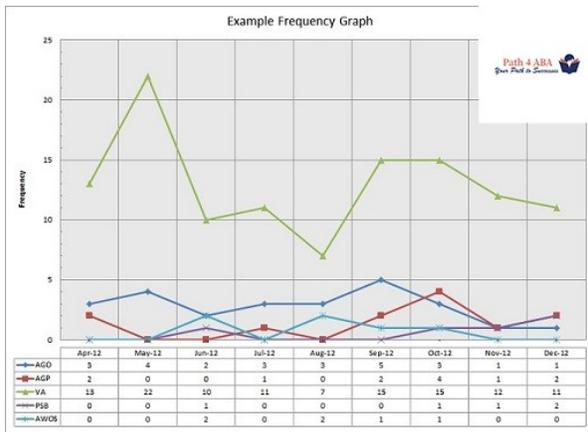
measures offer an objective and concrete representation of behavior but may not capture the full context or nuances of the behavior.

It's important to note that different types of measures have their strengths and limitations, and the choice of measure depends on the research objectives, the nature of the behavior being assessed, and the available resources and constraints. Researchers often use a combination of direct, indirect, and product measures to gain a comprehensive understanding of behavior.

**C-3) Measure occurrence (e.g., count, frequency, rate, percentage).**

Measuring the occurrence of a behavior involves quantifying its frequency or rate of occurrence, as well as expressing it as a percentage. Here's an explanation of frequency rate and percentage, along with three sample questions related to measuring behavior occurrence.

Frequency: Frequency refers to the number of times a behavior occurs.



Rate: Rate refers to the number of times a behavior occurs within a given time period. It provides a count of how often the behavior happens. To calculate the frequency rate, you divide the total count of the behavior by the duration of the observation period. For instance, if you observe a behavior for 10 minutes and it occurs 20 times, the frequency rate would be 20 divided by 10, which equals 2 occurrences per minute. 20X per hour, 50 pushups per day (frequency and time included in rate)

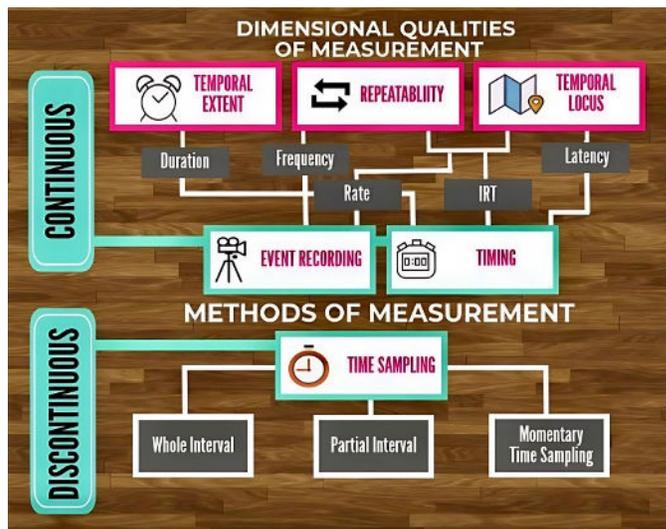
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**Percentage:** Percentage represents the proportion or relative frequency of a behavior in relation to a total. It expresses the behavior as a percentage of the total number of occurrences or events. To calculate the percentage, divide the number of occurrences of the behavior by the total number of events and multiply by 100. For example, if you observe 50 instances of a behavior out of 200 total instances, the percentage would be  $(50 / 200) * 100$ , which equals 25%.

**Frequency:** Number of occurrences of the behavior

**Rate:** Number of occurrences of a behavior/Time

**Percentage:** Number of occurrences out of 100. 10 occurrences in 100 intervals would be 10%



Changes in rate over time

Use for: examining how rates of response change over time; measuring fluency

Behavior can accelerate or decelerate over time: o Accelerate: faster responding to Decelerate: slower responding

Association with fluency building= increases in response rates

Pass has a definition for Repeatability – should we?

Pass has definitions for Count, Rate, and Celeration (accelerate / decelerate) changes in rate over time – we have Rate. Do we need for Count and Celeration?

Pass defines Derivative Measures – should we?

Example questions related to measuring behavior occurrence:

Add answers to Answer Key or for reflection?

1. How does measuring behavior occurrence using frequency rates provide a more detailed understanding of the behavior compared to simply counting the occurrences?
2. In what situations would it be more appropriate to express behavior occurrence as a percentage instead of using frequency rates?
3. Discuss the potential challenges in accurately measuring behavior occurrence, and how you would address those challenges to ensure reliable data collection.

**C-4) Measure temporal dimensions of behavior (e.g., duration, latency, inter-response time).**

The temporal dimensions of behavior refer to various aspects related to the timing and duration of behavioral events. Three important dimensions to consider are duration, latency, and inter-response time.

1. Duration: Duration refers to the length of time that a behavior persists or continues once it has begun. It is an important measure for quantifying how long a behavior lasts. For example, if we are observing a child's tantrum behavior, we may be interested in knowing the duration of the tantrum, which could be measured in minutes or seconds. A question related to duration could be: How does the duration of a child's tantrum behavior vary based on different situational factors?

Pass includes Methods to calculate duration: Total per session, duration of each occurrence – should we include?

2. Latency: Latency is the amount of time that elapses between the presentation of a stimulus or cue and the initiation of a behavior. It measures the speed of response onset. For instance, if a teacher gives a command to a student, the latency of the student's response would be the time it takes for the student to start complying with the command. A question related to latency could be: How does the latency of response differ between novice and expert performers in a specific task?

3. Inter-response Time (IRT): Inter-response time refers to the time interval between the completion of one instance of a behavior and the onset of the next instance of the same behavior. It provides insight into the temporal patterning of behavior. For example, in the context of a rat pressing a lever for food, IRT would be the time between two consecutive lever presses. A question related to IRT could be: How does the reinforcement schedule affect the inter-response time in a rat's lever-pressing behavior?



These temporal dimensions help in analyzing and understanding the timing aspects of behavior, providing valuable insights into patterns, efficiency, and relationships between different behavioral events.

**C.5. Distinguish between continuous and discontinuous measurement procedures.**

&

**C.6. Design and apply discontinuous measurement procedures (e.g., interval recording, time sampling).**

Continuous Measurement:

**Data Sheet: Frequency**  
 Directions: Complete the following data collection sheet to determine how frequently a learner is engaging in a particular behavior.

Learner: D.S. Observer: Ms. Jade U.

D.S. hits herself with closed fist of right hand on right side of head.

Date	Setting/Activity	Length of observation	Behavior	# of times (tally marks)	Total # of times	Before, during, or after intervention
10/5						
10/1	Recess	15 min	Hitting	Used data clicker	9	Before
10/2	Music	15 min	Hitting		11	Before
10/3	Math	15 min	Hitting		7	Before
10/4	Recess	15 min	Hitting		10	Before

1. Measure frequency: This task involves the ability to accurately count the number of times a behavior occurs within a given timeframe. RBTs should be able to use a tally counter, clicker, or other appropriate tools to track the frequency of behavior.

Remember “rate” is frequency over/time. For example, he was aggressive 3 times per hour, 5 times per day... it includes the frequency but also the time frame in which that frequency occurred or occurs on average.

2. Measure duration: Duration is the length of time that a behavior occurs, from the onset of the behavior to the end. They need to be proficient in using a stopwatch or timer to record the duration of behavior accurately.

3. Measure latency: This task involves measuring the time between a specific event or stimulus and the initiation of a behavior. RBTs need to be able to use a stopwatch or timer to measure the latency accurately. An example would be measuring from the time someone says “come here”, till you come to the individual. Or the time from the command “clap hands” till the client claps their hands

4. Measure inter-response time (IRT): The IRT is the time between the end of one behavior and the beginning of the next behavior. RBTs should be able to measure the IRT using a stopwatch or timer. This is the time from the end of one behavior to the onset of a new behavior. The individual was aggressive for 3 minutes and stopped at 4:15. The client was then Aggressive at 4:45. So the inter-response time was 30 minutes.

5. Measure percentage: RBTs need to be able to calculate and report the percentage of behavior occurrence or non-occurrence. This task involves basic mathematical skills to determine the percentage accurately.

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6. Measure trials-to-criterion: This task involves recording the number of attempts or trials required for an individual to achieve a specific performance criterion. RBTs should be able to accurately track and record the number of trials it takes for a learner to reach a predetermined level of mastery.

Student	Embedded Instruction		Massed Instruction	
	Total Trials to Criterion	Average Trials Per Session	Total Trials to Criterion	Average Trials Per Session
Bill	240	15	150	15
Sarah	615	19.2	505	20.2
Andy	255	13.4	342	12.7
Toby	245	13.6	245	13.6

7. Measure topography: RBTs need to be able to describe and record the physical characteristics or form of a behavior accurately. This includes providing a detailed description of the behavior's appearance, such as body movements, vocalizations, or gestures.

### Function vs. Topography

- Topography = form of the behavior
- Function = function of the behavior
- Different topographies of problem behavior
  - Can serve the same function
  - Can serve different functions
- Similar topographies of problem behavior
  - Can serve the same function
  - Can serve different functions
- Function is more important for intervention than form

Cooper, Heron, and Heward  
Applied Behavior Analysis, Second Edition

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8. Measure magnitude: This task involves assessing the intensity or force of a behavior. RBTs should be able to accurately rate or measure the level of intensity using appropriate measurement scales or tools.

### Defining the Behavior

#### Topography

- What does the behavior look and sound like?

#### Magnitude

- Intensity
- Duration
- Frequency

#### Function

- Why is the behavior occurring?
- What purpose does the behavior serve for the student?

9. Measure rate: RBTs should be able to determine the rate at which a behavior occurs. This involves calculating the number of occurrences of a behavior per unit of time (e.g., per minute, per hour).

Measure discontinuous measurement procedures

Name	Definition	Advantages	Disadvantages
Partial Interval Recording	Records whether behavior occurred at ANY time	You do not have to observe the rest of the interval after the behavior occurs	Overestimates total duration of behavior, and underestimates frequency of high-rate behaviors
Whole Interval Recording	Observer only records if the behavior occurs during the ENTIRE interval	Good for high rate behaviors that cannot be discretely counted	You have to observe during the ENTIRE interval Often underestimates occurrence of behavior
Momentary Time Sampling	Records whether the behavior is occurring at the moment when the interval ends	You do not have to attend to the behavior except at the end of the time interval	Overestimates and underestimates the continuous duration measure when time intervals greater than 2 minutes

Partial interval recording:

In partial interval recording, the observer records whether the behavior occurs at any point during the interval. If the behavior is observed at least once during the interval, it is scored as a "yes."

Partial interval recording tends to overestimate the occurrence of behavior if it is frequent or continuous.

\*If it occurs 3 times, or 30 times in an interval it counts as a "+" an occurrence

	Staying in Area (+/-)	Aggression (+/-)
1:20-1:25	+	
1:25-1:30	+	
1:30-1:35	+	
1:35-1:40	-	
1:40-1:45	-	
1:45-1:50	+	
1:50-1:55	+	
1:55-2:00	+	
2:00-2:05	-	
2:05-2:10	+	
2:10-2:15	+	
2:15-2:20	+	
2:20-2:25	+	
2:25-2:30	+	
2:30-2:35	+	
2:35-2:40	-	
Total:	12/16	

75%

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## Whole Interval Recording:

In whole interval recording, the observer records whether the behavior occurs throughout the entire interval. If the behavior is observed throughout the entire interval, it is scored as a "yes." Otherwise, if the behavior is absent or only partially present, it is scored as a "no." Whole interval recording tends to underestimate the occurrence of behavior if it is brief or sporadic.

### Whole Interval Recording: Underestimates

Write a "+" if the behavior happens for the ENTIRE interval

--	--	--	--	--	--	--	--	--	--

Intervals with a + \_\_\_\_\_  
 Number of intervals \_\_\_\_\_  
 Percentage of intervals with behavior \_\_\_\_\_

#### Whole Interval Recording Data Sheet

Learner: \_\_\_\_\_ Date: \_\_\_\_\_  
 Observer(s): \_\_\_\_\_ Location: \_\_\_\_\_

**Instructions:** Write the target behavior and definition in the spaces below. Write the length of the observation interval (e.g., 10s) in the space below. For each interval circle the "+" if the behavior occurred during the *entire* interval or circle the "-" if the behavior did not occur during the *entire* interval. Summarize the behavior at the bottom of the data sheet.

Target Behavior and definition: \_\_\_\_\_

Length of Observation Interval: \_\_\_\_\_

Interval	Time	Occurrence	Interval	Time	Occurrence
1.		+ -	6.		+ -
2.		+ -	7.		+ -
3.		+ -	8.		+ -
4.		+ -	9.		+ -
5.		+ -	10.		+ -

Total number of Intervals	# of Intervals w/ Occurrence	# of Intervals w/o Occurrence	% of Intervals w/ Occurrence	% of Intervals w/o Occurrence

## Momentary time sampling

**Momentary Time Sampling:** In momentary time sampling, the observer records whether the behavior is occurring at the end of each interval. If the behavior is observed at that specific moment, it is scored as a "yes." Otherwise, if the behavior is absent, it is scored as a "no." Momentary time sampling is useful for assessing the overall occurrence of behavior during an observation period.

### Types of Data Collection

<b>Permanent Product</b>	<ul style="list-style-type: none"> <li>Data is recorded by documenting the effect a behavior has on its environment.</li> <li>Best used when behaviors produce a tangible product.</li> <li>The item produced is the data (e.g. worksheet or video recording)</li> </ul>
<b>Frequency Recording</b>	<ul style="list-style-type: none"> <li>Data is recorded by counting how many times a behavior occurs in a period of time.</li> <li>Best used when behaviors have a clear beginning and end.</li> <li>Use a tally mark to record data</li> </ul>
<b>Duration Recording</b>	<ul style="list-style-type: none"> <li>Data is recorded by measuring how long the behavior occurs during a period of time.</li> <li>Best used when behaviors occur for long or varying lengths of time.</li> <li>Use a timer to record the interval.</li> </ul>
<b>Interval Recording</b>	<ul style="list-style-type: none"> <li>Data is recorded by measuring if a behavior occurs during an observation interval.</li> <li>Best used when behaviors are occurring at a high rate and are difficult to count.</li> <li>Use a timer to record the interval.</li> </ul>

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#### Momentary Time Sampling Form

Student's Name: \_\_\_\_\_ Teacher: \_\_\_\_\_  
 Subject/Period: \_\_\_\_\_ Date(s): \_\_\_\_\_

Behavior Definition (in specific, observable, measurable terms):  
 \_\_\_\_\_  
 \_\_\_\_\_

Total Observation Time: \_\_\_\_\_ Length of each interval: \_\_\_\_\_

Date	Interval #										Total times behavior occurred (X)
	1	2	3	4	5	6	7	8	9	10	
O or X											

Date	Interval #										Total times behavior occurred (X)
	1	2	3	4	5	6	7	8	9	10	
O or X											

Date	Interval #										Total times behavior occurred (X)
	1	2	3	4	5	6	7	8	9	10	
O or X											

Date	Interval #										Total times behavior occurred (X)
	1	2	3	4	5	6	7	8	9	10	
O or X											

#### A-4) Implementing Permanent product procedures

### Examples of Permanent Products

- number of problems worked
- trash taken out
- room cleaned
- windows broken
- % of problems correct, wrong
- blood pressure
- audio and videotapes

Strategies for Addressing Behavior Problems in the Classroom, Sixth Edition  
 Kerr / Nelson ISBN: 0136045251

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Permanent product recording is a data collection method used in Applied Behavior Analysis (ABA) to measure behavior by examining the tangible outcome or result of the behavior rather than directly observing the behavior itself. This method is particularly useful when it is difficult or impractical to directly observe the behavior in real-time. Here's how you can implement permanent product recording procedures in ABA:

\*\*How many work sheets, problems correct, widgets created at a job, etc... Clear beginning and completion.

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1. Define the behavior: Clearly define the behavior you want to measure. The behavior should be objective, observable, and measurable. For example, if you want to measure a child's reading skills, the behavior could be the number of words read correctly.
2. Identify the product: Determine the tangible product or outcome that is a result of the behavior. This could be a completed worksheet, a written essay, a puzzle solved, or any other concrete representation of the behavior.
3. Establish a measurement system: Decide how you will quantify and record the product. This could involve counting the number of correct responses, measuring the length or quality of the product, or using a rating scale to assess the outcome.
4. Determine the recording procedure: Select a method to record the product. This can vary depending on the behavior and the context. Common methods include using checklists, rating scales, rubrics, or simply tallying the number of correct responses.
5. Train data collectors: If multiple individuals will be involved in collecting data, ensure they receive proper training on the measurement system and recording procedure. This helps to maintain consistency and reliability in data collection.
6. Collect data: Implement the permanent product recording procedure by consistently collecting data on the identified product. This may involve collecting data during specific time intervals, after each occurrence of the behavior, or at predetermined intervals (e.g., daily, weekly).
7. Analyze and interpret data: Once data has been collected, analyze the results to gain insights into the behavior. This may involve calculating frequencies, percentages, averages, or making comparisons over time or across different conditions. Data analysis can help identify patterns, trends, and the effectiveness of interventions.
8. Use the data: Utilize the data obtained through permanent product recording to make informed decisions and guide interventions. The data can help monitor progress, evaluate the effectiveness of treatments, and inform adjustments to behavior management strategies.

9. Maintain data integrity: Ensure data accuracy and reliability by maintaining clear and consistent documentation, properly storing data, and adhering to ethical guidelines regarding data privacy and confidentiality.

**C-7 Measure efficiency (e.g., trials to criterion, cost-benefit analysis, training duration).**

Measuring efficiency is crucial in applied behavior analysis as it allows practitioners to evaluate the effectiveness and practicality of interventions. Three key methods of measuring efficiency include trials to criterion, cost-benefit analysis, and training duration. Here’s an overview of each:

1. Trials to Criterion

Trials to criterion is a measure that tracks how many attempts or trials an individual requires to achieve a predetermined level of proficiency or mastery in a specific skill or behavior. This metric helps assess the effectiveness of an instructional strategy and the learner's ability to acquire a new skill.

Student	30-min schedule		120-min schedule	
	Total trials to criterion	Mean trials per session	Total trials to criterion	Mean trials per session
Jason	63	3	90	3
Scott	18	3	30	3
Steve	18	3	18	3
Andrew	20	4	20	4

Application: For example, if a child is learning to identify colors, a behavior analyst may set a criterion of correctly naming five colors in a row. The number of trials needed to reach this criterion can indicate whether the current teaching method is effective or if adjustments may be needed.

Importance: This measure provides insight into not only the learner’s progress but also the efficiency of the intervention being employed. Reduced trials to criterion indicate that learning is occurring more quickly and effectively, leading to better resource allocation and improved outcomes.

2. Cost-Benefit Analysis

Cost-benefit analysis (CBA) involves comparing the costs associated with an intervention to the benefits gained from its implementation. In ABA, costs may include resources such as time, money, personnel, and materials, while benefits could encompass improvements in behavior, skill acquisition, and overall quality of life for clients.

**Application:** When evaluating a new behavioral intervention, a behavior analyst may assess the financial costs of training staff against the long-term improvements in client functioning and independence. This analysis helps determine if an intervention is worth maintaining or if alternative approaches should be considered.

**Importance:** CBA is essential for making informed decisions about which interventions to implement. By ensuring that the benefits outweigh the costs, practitioners can optimize resource utilization and maximize client outcomes.

### 3. Training Duration

Training duration refers to the amount of time spent on training individuals to acquire new skills or behaviors. Measuring training duration can highlight how efficiently skills are taught and how quickly individuals can master those skills.

**Application:** In an educational setting, for example, if a student requires several weeks of intensive instruction to achieve a particular skill, whereas another student masters the same skill in just a few sessions, this metric can inform decision-making on instructional strategies.

**Importance:** Shorter training durations generally indicate greater learning efficiency. Understanding training duration allows behavior analysts to evaluate different teaching methodologies and make evidence-based decisions about what works best for individual learners.

## **C.8. Evaluate the validity and reliability of measurement procedures.**

In applied behavior analysis, measurement is crucial for assessing the effectiveness of interventions and making data-driven decisions. To ensure that measurement procedures yield trustworthy data, behavior analysts must evaluate both the validity and reliability of those procedures. Below, we explore these concepts in detail.

### 1. Validity

Validity refers to how accurately a measurement procedure reflects the specific construct it intends to measure. A valid measurement procedure answers the question: "Are we measuring what we say we are measuring?" There are several types of validity in behavior analysis:



**Construct Validity:** This assesses whether a measurement procedure accurately captures the theoretical construct it's designed to measure. For instance, if measuring anxiety through observational behavior, it should reflect behaviors that are theoretically linked to anxiety.

**Content Validity:** This evaluates whether the measurement captures all relevant aspects of the construct. For example, if assessing communication skills, the measurement should include a variety of communication modes (verbal, nonverbal, written).

**Criterion-Related Validity:** This involves comparing the measurement with an external benchmark or criterion known to measure the same construct. For example, if an observational checklist is designed to assess social skills, criterion-related validity could be established by correlating scores with another established social skills measure.

**Importance:** Validity is essential for ensuring that behavioral data truly represent the behaviors or skills of interest. Without valid measurements, the conclusions drawn from data may lead to inappropriate or ineffective interventions.

## 2. Reliability

Reliability refers to the consistency and stability of measurement results over time and across different observers. A measurement procedure is considered reliable if it yields the same results under consistent conditions. Key types of reliability in ABA include:

Inter observer Agreement (IOA): This measures the extent to which two or more observers agree on their recordings of the same behavior. High levels of IOA suggest that the measurement procedure is reliable and that observers are interpreting behavior similarly.



Test-Retest Reliability: This involves measuring the same behavior at different points in time and assessing the consistency of the results. For example, if a skill assessment is administered to the same individual two weeks apart, similar scores indicate strong test-retest reliability.



Split-Half Reliability: This method assesses the consistency of measurements by splitting the assessment into two halves and comparing the results. Consistent performance between the two halves suggests reliability.

Importance: Reliability ensures that the measurement process produces stable and repeatable results, which is vital for tracking progress, making informed decisions, and ensuring the credibility of the data collected.

### Inter-Observer Agreement

Inter-observer Agreement IOA: Inter-observer Agreement (IOA) refers to the degree to which two or more independent observers report the same observed values after measuring the same events.

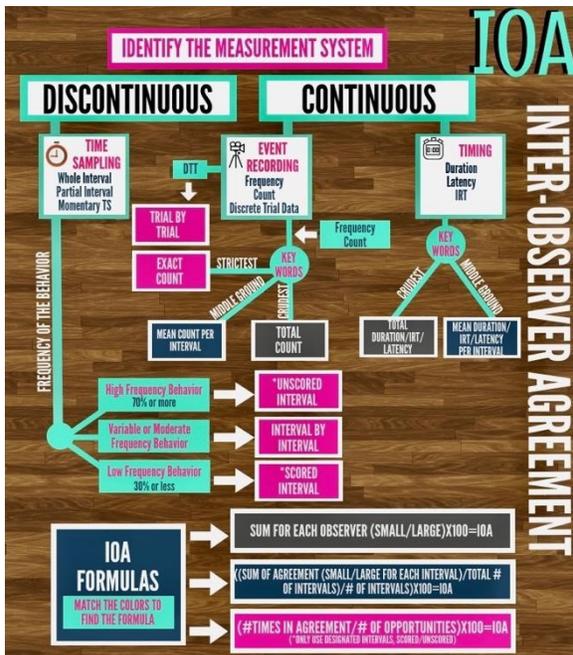
Benefits of IOA

Determine the competence of new observers (when IOA is low)

Detect observer drift over the course of a study (when IOA is low)

Increases confidence that the target behavior was clearly defined (when IOA is high)

Confirms that change in data is due to change in behavior and not in data collection (when IOA is high)



### Methods for collecting IOA

Total count IOA – this is the simplest and least exact method.  $IOA = \text{smaller count} / \text{larger count} * 100$ . Caution must be used because there is no guarantee that the observers are recording the same instances of the behavior.

Mean count-per-interval IOA – The chance to have a more accurate representation of IOA is by dividing up the total observation period into a series of smaller counting times and having the observers record the number of occurrences of behavior within each interval calculating the agreement between the observer counts within each interval, using the agreements per interval as the basis for calculating the IOA for the total observation period

$$IOA = \frac{\text{int 1 IOA} + \text{int 2 IOA} + \dots + \text{int N IOA}}{n \text{ intervals}} * 100$$

3. Exact Count-per-interval IOA – is the most exact way to count IOA. This is the percent of intervals in which observers record the same count.  $IOA = \frac{\# \text{ of intervals at } 100\% \text{ IOA}}{n \text{ intervals}} * 100$

4. Trial-by-trial IOA –  $\frac{\# \text{ of trials items agreement}}{\# \text{ of trials}} * 100$

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## Interval IOA

In the Scored interval IOA, you determine the number of intervals that have a “yes.” Then you divide the number of those that agree by the total number of those intervals.

In Unscored Interval IOA, you do the same for the Scored Interval IOA, except you take the number of intervals that have a “no.”

You determine the number of intervals that have a “no.” Then you divide the number of those that agree by the total number of those intervals.

## Interobserver Agreement (IOA)

- A measure of validity
- Multiple calculations
- This is TOTAL COUNT IOA

$$\frac{\text{Total \# of agreements}}{\text{Total \# of agreements + disagreements}} \times 100 = \%$$

Date:	Observer 1 Name:	Observer 2 Name:
Interval length:		

**Total Count Interobserver Agreement (IOA) Data Sheet**

Interval	Observer 1 Data	Observer 2 Data	Total Count IOA
1			<small>Description:</small> Total count IOA is used with frequency data. It compares the sum of each observer's frequency recordings with one another. Be careful interpreting this type of data, because the observers may not be recording the same instances of the behavior.  <small>Formula (Written):</small> Smaller sum divided by the larger sum multiplied by 100 equals Total Count IOA %  <small>Formula (Numerical):</small> (Smaller sum / larger sum) x 100 = Total count IOA %
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
<b>Sum →</b>			%

## Reliable vs. Accurate Data

Reliable data is data that gives the same results each time you measure it.

Accurate data is data that is correct.

**C-9 Select a measurement procedure to obtain representative data that accounts for the critical dimension of the behavior and environmental constraints.**

In applied behavior analysis, selecting an appropriate measurement procedure is essential for accurately capturing behavior and informing intervention strategies. To ensure that the data collected is representative, behavior analysts must account for the critical dimensions of the behavior being assessed as well as any environmental constraints that may influence measurement. Below are key considerations in this process.

1. Identifying Critical Dimensions of Behavior

Critical dimensions of behavior refer to the specific attributes that characterize the behavior being measured. Key dimensions include:

- Frequency: The number of times a behavior occurs within a specified timeframe. This is particularly relevant for discrete behaviors that can be easily counted.
- Duration: The total time a behavior occurs during a specific observation period. Duration measurements are vital for behaviors that vary in length, such as tantrums or social interactions.
- Latency: The time that elapses between a stimulus and the initiation of the behavior. Measuring latency can be crucial for understanding response times to environmental cues.
- Intensity: A measure of how forceful or pronounced a behavior is. This is often used for behaviors that have varying levels of expression, such as verbal outbursts or engagement levels.
- Quality: This dimension addresses how well a behavior is performed, and it typically requires specific criteria or rubrics for assessment.

Selecting a Measurement Procedure: The chosen measurement procedure must align with the critical dimensions identified. For example:

If frequency is the primary dimension, continuous data recording may be appropriate.

If duration is critical, the use of a time sampling method may be more suitable.

## 2. Considering Environmental Constraints

Environmental constraints are variables in the setting that may impact the behavior being assessed or the ability to measure it accurately. These can include:

**Physical Environment:** Factors such as noise, space limitations, and available materials can affect behavior and observation accuracy. For instance, measuring behavior in a noisy classroom may lead to misinterpretations of social interactions.

**Timing:** Observational periods must be chosen carefully to capture representative behavior. For example, some behaviors may only occur during specific times of day or in particular situations.

**Observer Variables:** The presence and behavior of the observer can influence data collection. Training observers to minimize their influence can improve data accuracy.

**Availability of Resources:** The resources that behavior analysts have, including technology for data collection (e.g., apps, video recording), may dictate the type of measurement procedures that are feasible.

## 3. Selecting a Measurement Procedure

After identifying critical dimensions of behavior and considering environmental constraints, behavior analysts can choose a suitable measurement procedure. Some common options include:

**Direct Observation:** This involves the real-time recording of behavior in its natural context, allowing for an accurate assessment of the behavior's dimensions. This method can be supported by frequency counts, duration logs, and time sampling.

**Permanent Product Measurement:** This involves assessing the outcomes or results of behaviors rather than the behaviors themselves. This can be useful for behaviors that leave behind tangible evidence (e.g., completed homework).

**Self-Reporting:** Using tools such as journals or surveys, individuals can report their own behaviors or experiences. This method can account for subjective dimensions like quality but may be subject to bias.

**Structured Checklists or Rating Scales:** These can be employed to assess specific behaviors based on set criteria, facilitating qualitative data collection and interpretation.

In the context of applied behavior analysis (ABA) and statistical hypothesis testing, a Type I error and a Type II error represent two kinds of common mistakes that can occur during the analysis of data.

#### Type I Error (False Positive)

A Type I error occurs when the analyst incorrectly rejects the null hypothesis when it is actually true. This error leads to the false conclusion that a treatment or intervention had an effect when, in fact, it did not. The probability of making a Type I error is denoted by alpha ( $\alpha$ ), which is often set at 0.05, meaning there is a 5% risk of falsely declaring a treatment effective.

#### Example of a Type I Error in ABA:

Imagine an ABA therapist tests a new behavioral intervention designed to reduce self-injurious behavior in a client. The therapist collects data and conducts a statistical test that leads to the rejection of the null hypothesis (which states that the intervention has no effect). If, in reality, the intervention does not actually affect the behavior, and the observed change was due to random fluctuation or other variables, the therapist has made a Type I error by concluding that the intervention was effective.

#### Type II Error (False Negative)

A Type II error occurs when the analyst fails to reject the null hypothesis when it is actually false. This error results in the false conclusion that a treatment or intervention had no effect when, in fact, it did. The probability of making a Type II error is denoted by beta ( $\beta$ ), and  $1-\beta$  is the power of the test, which is the probability of correctly rejecting the null hypothesis when it is false.

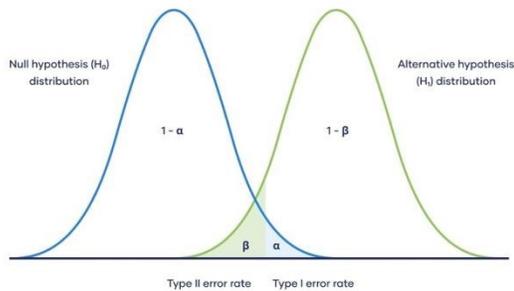
#### Example of a Type II Error in ABA

Consider the same ABA therapist who has implemented a different intervention aimed at increasing verbal initiations in a child with autism. After the intervention, the therapist analyzes the data and concludes that there is no significant change in the rate of verbal initiations. However, if in reality the intervention did cause an increase in verbal initiations and the test failed to detect this effect (perhaps due to small sample size or insufficient data collection), the therapist has made a Type II error by incorrectly concluding that the intervention was ineffective.

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Type I and Type II Error		
Null hypothesis is ...	True	False
Rejected	Type I error False positive Probability = $\alpha$	Correct decision True positive Probability = $1 - \beta$
Not rejected	Correct decision True negative Probability = $1 - \alpha$	Type II error False negative Probability = $\beta$

Probability of making Type I and Type II errors



These errors are critical considerations in ABA because they can lead to incorrect decisions about the efficacy of behavioral interventions, potentially affecting the quality of care and support provided to clients. It is crucial for analysts to design studies and choose statistical tests that appropriately balance the risks of Type I and Type II errors, considering the consequences of each in the context of their specific research or clinical application.

### **C.10. Graph data to communicate relevant quantitative relations (e.g., equal-interval graphs, bar graphs, cumulative records).**

Data visualization is a fundamental aspect of applied behavior analysis, as it allows practitioners to effectively communicate quantitative relations, assess intervention effectiveness, and make informed decisions based on empirical evidence. The choice of graphing method can significantly influence the clarity and interpretability of the data presented. Here are three common types of graphs used in ABA:

#### 1. Equal-Interval Graphs

Equal-interval graphs, often referred to as line graphs or time-series graphs, are commonly used in ABA to depict changes in behavior over time. These graphs plot individual data points representing behavior measurements (e.g., frequency, duration, latency) against a time axis,

typically with the y-axis representing the measured behavior and the x-axis representing time intervals.

**Key Features:**

The y-axis has equal intervals, allowing for a clear representation of variations in the measured behavior.

Data points are connected with lines, which helps visualize trends, patterns, and fluctuations in behavior.

**Advantages:**

Line graphs clearly show the progress of behavior over time and facilitate the identification of trends such as improvements, reductions, or stability.

They provide a visual representation that can highlight the effectiveness of interventions at specific time points.

Example: A line graph showing the frequency of a student's on-task behavior during class sessions over a week can help identify trends and evaluate the effectiveness of a behavioral intervention.

## 2. Bar Graphs

Bar graphs display categorical data and are useful for comparing different groups or conditions. In ABA, bar graphs can effectively represent discrete data points or summarize performance across distinct conditions or sessions.

**Key Features:**

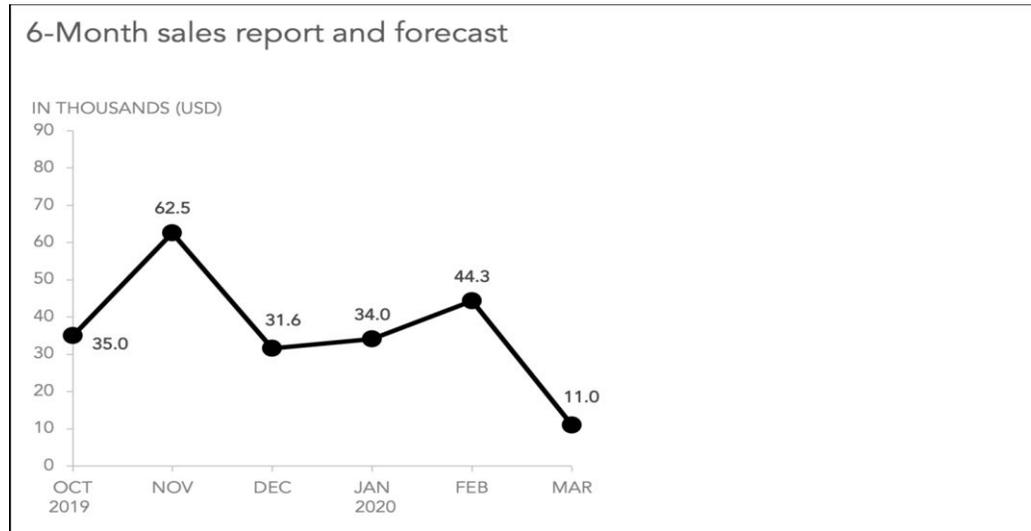
Data are represented by rectangular bars, where the length of each bar corresponds to the value of the measured behavior.

Bars are typically grouped by conditions or categories, making it easy to visually compare results.

**Advantages:**

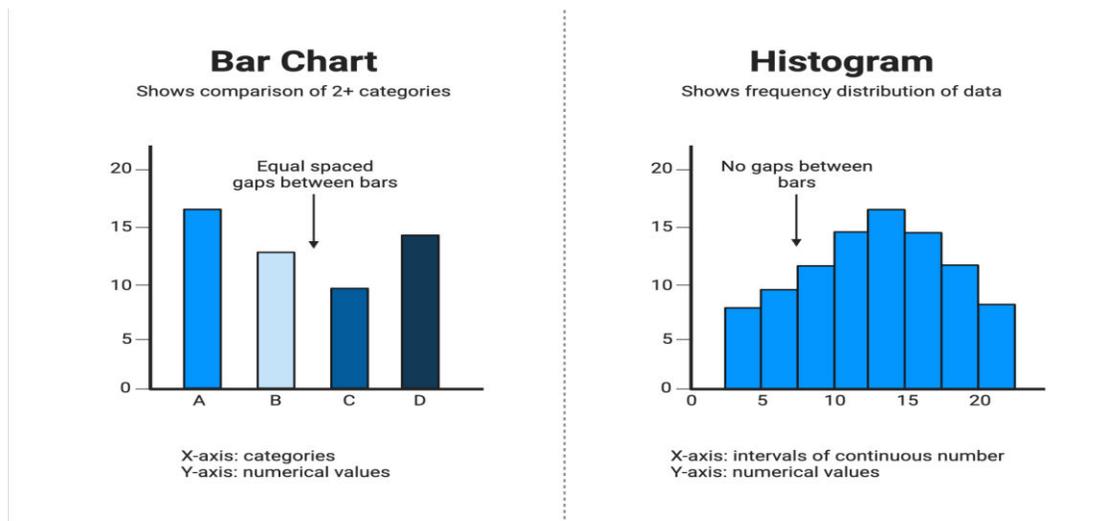
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Bar graphs are particularly useful for displaying data collected under different treatments or conditions, making it easy to see differences at a glance.



They can effectively represent non-continuous data points or specific intervals without needing a time component.

Example: A bar graph comparing the percentage of correct responses across different teaching strategies can quickly illustrate which method was most effective.



### 3. Cumulative Records

Cumulative records are a specific type of graph that tracks the total number of responses or behaviors over time, resulting in a running total. This graphing method is commonly used in discrete trial training and other applications where tracking cumulative progress is beneficial.

**Key Features:**

Data points represent cumulative totals plotted over time, with the line only going upwards or remaining flat.

The steepness of the slope indicates the rate of behavior occurring over time; a steeper slope reflects a higher rate of responses.

**Advantages:**

Cumulative records provide a clear visual of progress towards a goal and can demonstrate learning trends, including acceleration and deceleration of behavior.

They allow easy identification of when new skills are being acquired, as more rapid increases in cumulative data point to effective learning moments.

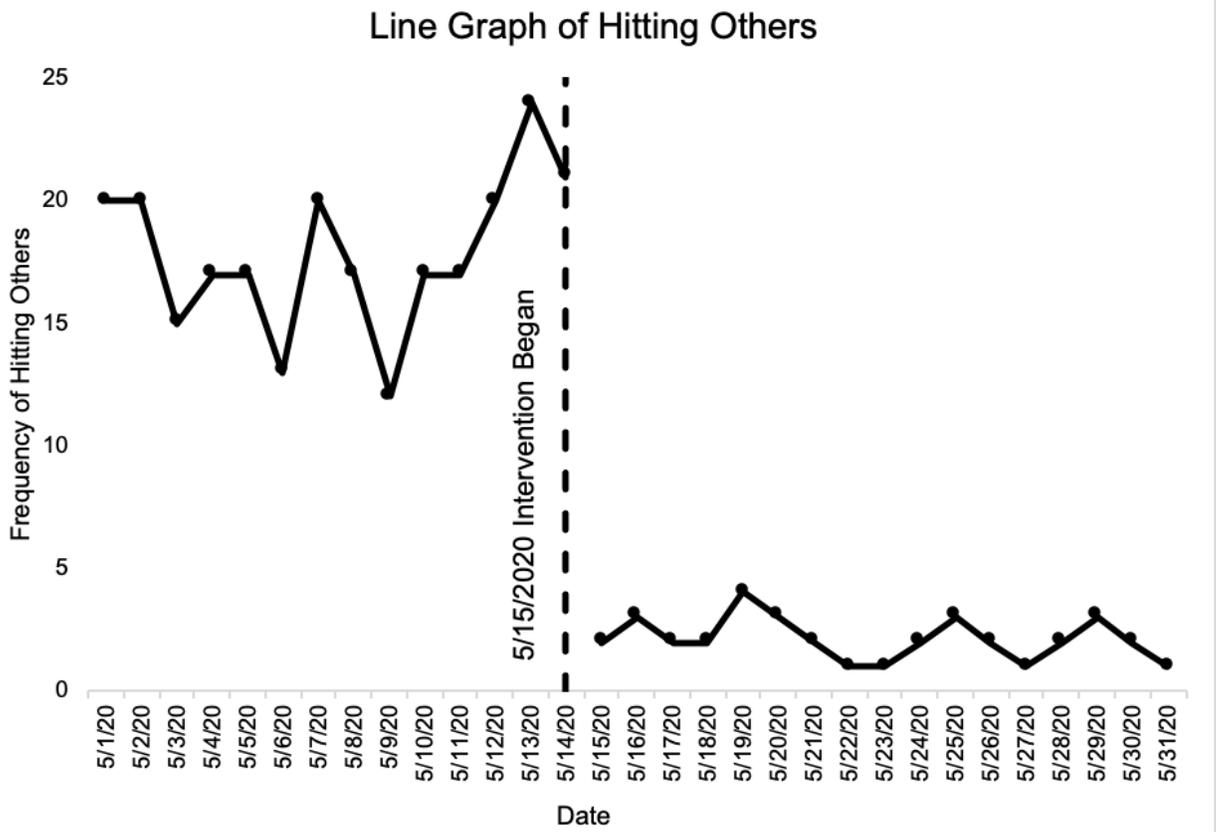
Example: A cumulative record tracking the number of correct responses a child makes in a series of reading lessons can visually demonstrate how quickly the child is learning the material.

**C.11. Interpret graphed data.**

1. Understanding Data Collection Methods: Data can be collected using various methods including direct observation, checklists, frequency counts, and more. The type of data collected—whether it's continuous, discrete, or interval data—affects the interpretation

process. BCBAs must be versed in these methods to select appropriate data types for the target behavior.

2. Evaluating Graphs: BCBAs commonly use visual representations, such as line graphs and bar graphs, to interpret behavioral data. Key aspects to assess include:
  - a. Trends: Identify patterns over time. Are behaviors increasing, decreasing, or remaining stable?
  - b. Variability: Observe the consistency of the data points. High variability may indicate inconsistent behavior or environmental influences that need to be controlled.
  - c. Level: Determine the average frequency or intensity of behavior by evaluating the y-axis values. Is the behavior meeting the desired criteria?
  - d. Changes in Phase: Analyze the impact of specific interventions by comparing data across different phases (baseline vs. intervention). Look for evidence of functional relations between interventions and behavior changes.
3. Making Informed Decisions: Based on the data analysis, BCBAs draw conclusions regarding the effectiveness of interventions. This may include:
  - a. Continuing, modifying, or ceasing interventions based on data trends.
  - b. Adjusting strategies to better suit individual needs, particularly when data



suggest a lack of progress.

- c. Communicating findings to stakeholders, including clients and caregivers, to ensure they understand the implications of the data.

**Linking Data to Functional Assessment:** BCBA's often relate data interpretation to functional assessments to ensure interventions are based on the underlying functions of behavior. Analyzing how interventions align with identified motivational variables (e.g., reinforcement or sensory needs) is crucial for effective programming.

**Using Decision-Making Frameworks:** Utilizing evidence-based decision-making frameworks helps BCBA's systematize the data interpretation process. Tools such as Single-Subject Research Designs (e.g., reversal designs, multiple baseline designs) provide additional insights into the effectiveness of interventions over time.

#### Scholarly Citation

For a more comprehensive understanding of data interpretation in ABA, the following scholarly source is recommended:

Miltenberger, R. G. (2016). *Behavior Modification: Principles and Procedures* (6th ed.). Cengage Learning.

This text offers foundational knowledge about applying behavior modification.

### **C.12. Select a measurement procedure to obtain representative procedural integrity data that accounts for relevant dimensions (e.g., accuracy, dosage) and environmental constraints.**

In applied behavior analysis, procedural integrity refers to the faithful implementation of treatment protocols and intervention strategies as planned. Ensuring high levels of procedural integrity is crucial for achieving successful outcomes and determining the effectiveness of interventions. To effectively measure procedural integrity, ABA practitioners must select appropriate measurement procedures that account for various dimensions and environmental constraints. Below are key considerations in this process.

#### 1. Relevant Dimensions of Procedural Integrity

When selecting a measurement procedure, it is essential to consider the following dimensions:

**Accuracy:** This dimension assesses whether the intervention is implemented as intended. Accurate measurement involves verifying that each step of the protocol is followed correctly.

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Inaccuracies may arise from misunderstanding instructions, miscommunication, or lack of training.

**Dosage:** Dosage refers to the amount of treatment or intervention delivered (e.g., the number of times a procedure is implemented or the duration of the intervention). Measuring dosage helps determine whether the treatment is delivered consistently and at appropriate levels to achieve desired outcomes.

By focusing on these dimensions, practitioners can ensure that the data collected will provide a comprehensive view of how well the intervention is being implemented.

### 2. Selecting a Measurement Procedure

Choosing an appropriate measurement procedure to capture procedural integrity data can significantly impact the results. Here are common measurement options to consider:

**Direct Observation:** This procedure involves observers directly monitoring the implementation of the intervention in real-time. Observers can use a checklist or a rating scale to tally whether specific components of the treatment protocol are implemented correctly. This method is highly effective for capturing both accuracy and dosage.

**Advantages:** Direct observation provides immediate feedback on procedural integrity and allows for real-time adjustments. It also adds an objective layer to data collection and is often the most reliable method for assessing adherence to intervention protocols.

**Permanent Product Measurement:** This approach assesses the outcomes of the intervention rather than directly observing the behavior. For example, if a behavior change plan involves completing homework assignments, the number of finished assignments can serve as a permanent product indicative of treatment implementation.

**Advantages:** This method can reduce the need for constant observation and can be useful for measuring the effect of the procedure indirectly.

**Self-Monitoring:** Implementers can be trained to track their own procedural integrity using recording tools, checklists, or digital apps. This method encourages accountability and allows staff to reflect on their practices.

**Advantages:** Self-monitoring can empower staff to take ownership of procedural fidelity and may help identify areas needing improvement without continuous supervisor oversight.

**Inter-observer Agreement (IOA):** When using direct observation, collecting data on inter-observer agreement can validate the accuracy of the measurements. When two or more observers agree on procedural integrity measurements, it increases confidence in the data collected.

**Advantages:** Measuring IOA provides a check on the reliability of the data and can ensure consistency in observations.

### 3. Considering Environmental Constraints

Environmental factors can influence the measurement of procedural integrity. It's important to consider:

**Setting:** The environment in which the intervention is implemented (e.g., classroom, home) may affect the ability to accurately monitor procedural fidelity. Factors such as noise levels, available resources, and number of implementers can impact implementation.

**Training:** The training level of the implementers can affect procedural integrity. Measurement procedures should account for the skill levels and experience of those delivering the intervention, potentially offering additional training or support as needed.

**Resources:** Availability of time and technology can impose constraints on measurement. For instance, limited observation time may necessitate more efficient data collection methods.

**Behavioral Context:** Certain behaviors may only be observable under specific conditions. Ensuring adequate representation of these contexts is necessary for an accurate measurement of procedural integrity.

Quiz on **Section C** - BACB 6th Edition Task List

**1. What is an operational definition of behavior?**

- A) A subjective interpretation of behavior
- B) A clear, objective description of a specific behavior that can be observed and measured
- C) A theoretical concept of behavior
- D) A detailed analysis of underlying motives

**2. Which of the following is considered a direct measure of behavior?**

- A) Using interviews to gather information about a behavior
- B) Observing and recording instances of a behavior as it occurs
- C) Analyzing records of completed homework
- D) Collecting surveys from teachers about student behavior

**3. Indirect measures of behavior include:**

- A) Direct observation
- B) Permanent product assessment
- C) Self-report questionnaires
- D) Video recordings of behavior

**4. What is a product measure of behavior?**

- A) Measuring behavior through direct observation
- B) Assessing the outcomes or results of a behavior after it has occurred
- C) Evaluating the motivations behind a behavior
- D) Analyzing physiological responses to behavior

**5. To measure occurrence means to:**

- A) Determine how often a behavior takes place
- B) Assess the quality of a behavior

- C) Evaluate the justification for a behavior
- D) Establish the setting in which a behavior occurs

**6. Which of the following is a temporal dimension of behavior?**

- A) Intensity
- B) Duration
- C) Quality
- D) Frequency

**7. Latency refers to:**

- A) The time taken to complete a behavior
- B) The time elapsed between a stimulus and the initiation of a behavior
- C) The number of times a behavior occurs in a given time frame
- D) The overall length of time a behavior is sustained

**8. Inter-response time (IRT) measures:**

- A) The time from one response to the next
- B) The total duration of a behavior
- C) The time taken to terminate a behavior
- D) The average intensity of a behavior

**9. Which of the following describes continuous measurement?**

- A) Measuring behavior in intervals at fixed times
- B) Assessing behavior occurrence across limited observation periods
- C) Tracking all instances of a behavior without breaks
- D) Using permanent products to derive behavior counts

**10. Discontinuous measurement refers to:**

- A) Continuous tracking of behavior every moment
- B) Measuring behavior in segmented or selected intervals
- C) Aggregating data from multiple interventions
- D) Focusing solely on the outcome of behaviors

**11. Which procedure is an example of interval recording?**

- A) Recording whether a behavior occurred during specific intervals
- B) Counting each instance of a behavior over an hour
- C) Monitoring the time taken for a child to respond to a prompt
- D) Assessing how many times a student engages in a specific behavior during an entire session

Answer: A

**12. Time sampling involves:**

- A) Observing and recording behavior throughout the entire observation period
- B) Observing behavior at predetermined intervals and recording if it occurs during those specific times
- C) Counting total occurrences of a behavior in a session
- D) Continuously measuring the duration of behavior until it ceases

**13. Measuring efficiency includes which of the following?**

- A) Just tracking the frequency of behaviors
- B) Evaluating cost and benefits of interventions
- C) Ignoring how long a skill takes to learn
- D) Focusing solely on behavioral outcomes

**14. What does it mean to evaluate the validity of a measurement procedure?**

- A) Ensuring the measurement is reliable over time
- B) Assessing whether the measurement accurately reflects the behavior it intends to measure
- C) Verifying that the results are consistent across different settings

D) Calculating the duration of the measurement process

**15. Reliability of measurement procedures focuses on:**

- A) The accuracy of the data collected
- B) The consistency of the measurement results across time and observers
- C) The duration of time spent measuring behavior
- D) The overall quality of the measurement tool used

**16. When selecting a measurement procedure, it is important to account for:**

- A) Personal biases in data interpretation
- B) The critical dimensions of the behavior and environmental constraints
- C) The opinions of other practitioners
- D) The cost of implementing the intervention only

**17. Which of the following is NOT a common type of graph used to communicate data in ABA?**

- A) Line graphs
- B) Bar graphs
- C) Cumulative records
- D) Circular charts

**18. Interpreting graphed data requires BCBA's to look for:**

- A) Aesthetic presentation of graphs
- B) Trends, levels, and variability within the data over time
- C) Subjective opinions about the data collected
- D) Only the final outcomes of the intervention

**19. When measuring procedural integrity, a BCBA should focus on:**

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- A) The number of interventions conducted
- B) The accuracy, dosage, and environment of the intervention delivery
- C) Client satisfaction alone
- D) Confidential feedback from participants about each session

### **20. What is the primary purpose of collecting data on procedural integrity?**

- A) To create reports for external stakeholders
- B) To ensure interventions are implemented as intended and to facilitate data-driven decision making
- C) To satisfy regulatory requirements
- D) To make comparisons among different practitioners

## ASSIGNMENT

Applied Supervision Assignment Plan, revised to include one required video assignment per section of the BACB 6th Edition Task List. These video tasks are designed to demonstrate applied competence and support mastery through direct modeling or verbal explanation.

### **Section C: Measurement, Data Display, and Interpretation**

#### 1. Data Sheet Design

Design a sheet for frequency and duration tracking.

#### 2. Graphing & Visual Analysis

Graph two weeks of data and provide visual interpretation.

#### 3. IOA and Treatment Integrity

Calculate IOA and TI from raw data and explain significance.

#### 4. Permanent Product Session

Conduct and reflect on permanent product data collection.

Video Assignment:

“How to Collect Accurate Data” – Demonstrate yourself teaching or modeling how to take data on a specific target behavior, explaining how and why you chose your data system.

## **Section C**

### **Books**

#### **(Primary Sources)**

1. Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). *Applied behavior analysis* (3rd ed.). Pearson.

(Chapters 4, 5, 6, and 7 — everything on measurement, graphing, and visual analysis.)

2. Johnston, J. M., & Pennypacker, H. S. (2009). *Strategies and tactics of behavioral research* (3rd ed.). Routledge.

(Excellent deeper reference for issues like IOA, validity, reliability, and threats to data integrity.)

3. Kazdin, A. E. (2011). *Single-case research designs: Methods for clinical and applied settings* (2nd ed.). Oxford University Press.

(Strong reference for interpreting visual displays, levels, trends, variability, and demonstrating functional relations.)

### **Journal Articles**

#### **(Foundational and Applied)**

1. Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis*, 1(1), 91–97.  
<https://doi.org/10.1901/jaba.1968.1-91>

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(Establishes why measurement must be reliable, valid, and show experimental control.)

2. Mudford, O. C., Taylor, S. A., & Martin, N. T. (2009). Continuous and discontinuous measurement: A brief review. *Behavior Modification*, 33(2), 128–150.  
<https://doi.org/10.1177/0145445508320969>

(Review of partial interval, momentary time sampling, and continuous measurement methods.)

3. Parsonson, B. S., & Baer, D. M. (1978). The analysis and presentation of graphic data. In T. R. Kratochwill (Ed.), *Advances in school psychology* (pp. 103–145). Erlbaum.

(Guide on how to properly construct and interpret graphs.)

4. Hartmann, D. P., Barrios, B. A., & Wood, D. D. (1978). Issues in the measurement of behavior. *Behavior Therapy*, 9(4), 544–559.

(Explores threats to measurement validity, reliability, and accuracy.)

### **Webpages**

#### **(Supplementary/Official Sources)**

1. Behavior Analyst Certification Board (BACB). (2022). BCBA 6th Edition Task List and Content Outline.

<https://www.bacb.com/bcba-6th-edition-task-list/>

(Direct expectations on measurement, graphing, interpretation.)

2. Association for Behavior Analysis International (ABAI). (n.d.). What is Behavior Analysis?

<https://www.abainternational.org/about-us/about-behavior-analysis.aspx>

(Briefly touches on the importance of precise, data-driven decision-making.)

3. Cambridge Center for Behavioral Studies. (n.d.). Behavior Analysis: A Brief Overview.

<https://behavior.org/behavior-analysis/>

(Explains behavior analysis relies heavily on objective data collection.)

4. University of West Florida (UWF) ABA Program. (n.d.). Measurement in Applied Behavior Analysis.

(UWF program outlines types of measurement procedures — like event recording, timing, permanent product — if still available.)

## KEY DEFINITIONS SECTION C

### Accuracy-

The extent to which observed values, the data produced by measuring an event, match the true state, or true values, of the event as it exists in nature.

### Bar graphs

A simple and versatile graphic format for summarizing behavioral data; shares most of the line graphs features except that it does not have distinct data points representing successive response measures throughout time.

Continuous measurement

This is a measurement conducted in a manner such that all instances of the response class(es) of interest are detected during the observation period.

Cost-benefit analysis

The process in which a behavior analyst weighs the likely difference between the cost of a treatment or intervention and the projected benefits.

Count-

A simple tally of the number of occurrences of a behavior. The observation period, or counting time, should always be noted when reporting count measures.

Cumulative record

A type of graph on which the cumulative number of responses emitted is represented on the vertical axis; the steeper the slope of the data path, the greater the response rate.

Direct measurement

Occurs when the behavior that is measured is the same as the behavior that is the focus of the investigation.

Discontinuous measurement

Measurement conducted in a manner such that some instances of the response class(es) of interest may not be detected.

Duration

The total time that behavior occurs; measured by elapsed time from the onset of a response to its end point.

Equal-interval scale

A scale in which equal distances on the axis represent equal absolute amounts of the variable plotted on the axis (e.g., behavior change on an equal-interval vertical axis).

**Frequency**- how often a behavior occurs. Some behavior analyst use frequency to mean rate (a ratio of responses per standard unit of time); others use frequency as a synonym for count.

## Glossary

### Indirect measurement

Occurs when the behavior that is measured is in some way different from the behavior of interest; considered less valid than direct measurement because inferences about the relation between the data obtained and the actual behavior of interest are required.

### Interresponse time (IRT)

A measure of temporal locus, defined as the elapsed time between two successive responses.

### Latency

A measure of temporal locus; the elapsed time from the onset of a stimulus to the initiation of a response.

### Level

The value on the vertical axis around which a series of behavioral measures converge.

### Line graphs

Based on a Cartesian plane, a two-dimensional area formed by the intersection of two perpendicular lines. Any point within the plane represents a specific relation between the two dimensions described by the intersecting lines. It is the most common graphic format for displaying data in applied behavior analysis.

### Measurement by permanent product

A Method of measuring behavior after it has occurred by recording the effects that the behavior produced on the environment.

**Momentary time sampling**

A measurement method in which the presence or absence of behaviors is recorded at precisely specified time intervals.

**Observed value**

A measure produced by an observation and measurement system. Observed values serve as the data that the researcher and others will interpret to form conclusions about an investigation.

**Partial interval recording**

A time sampling method for measuring behavior in which the observation period is divided into a series of brief time intervals (typically from 5 to 10 seconds). The observer records whether the target behavior occurred at any time during the interval. Partial interval recording is not concerned with how many times the behavior occurred during the interval or how long the behavior was present, just that it occurred at some point during the interval; tends to overestimate the proportion of the observation that the behavior actually occurred.

**Percentage (percent occurrence)**

A ratio (i.e., a proportion) formed by combining the same dimensional quantities, such as a count, expressed as a number of parts per 100; typically expressed as a ratio of the number of responses of a certain type per total number of responses (or opportunities or intervals in which such a response could have occurred). A percentage presents a proportional quantity per 100.

**Rate**

A fundamental measure of how often a behavior occurs expressed as count per standard unit of time (e.g., per minute, per hour, per day) and calculated by dividing the number of responses recorded by the number of standard units of time in which observations were conducted. Some behavior analysts use rate and frequency interchangeably; others use frequency to mean count.

**Reliability**

A refers to the consistency of measurement, specifically, the extent to which repeated measurement of the same event yields the same values.

**Repeatability**

A refers to the fact that a behavior can occur repeatedly through time (i.e., behavior can be counted); one of the three dimensional quantities of behavior from which all behavioral measurements are derived.

### Scatterplots

A two-dimensional graph that shows the relative distribution of individual measures in a data set with respect to the variables depicted by the x- and y- axes. Data points on a scatterplot are not connected.

### Semilogarithmic chart

A two-dimensional graph with a logarithmic scaled y-axis so that equal distances on the vertical axis represent changes in behavior that are of equal proportion.

### Standard acceleration chart

A multiply-divide chart with six base-10 (or  $\times 10$ ,  $\div 10$ ) cycles on the vertical axis that can accommodate response rates as low as 1 per 24 hours (0.000695 per minute) to as high as 1000 per minute. It enables the standardized charting of celeration, a factor by which rate of behavior multiplies or divides per unit of time.

### Temporal extent

Refers to the fact that every instance of behavior occurs during some amount of time; one of the three dimensional quantities of behavior from which all behavioral measurements are derived.

### Temporal locus

Refers to the fact that every instance of behavior occurs at a certain point in time with respect to other events (i.e., when in time behavior occurs can be measured); often measured in terms of response latency and inter response time (IRT); one of the three dimensional quantities of behavior from which all behavioral measurements are derived.

### Trend

The overall direction taken by a data path. It is described in terms of direction (increasing, decreasing, or zero trend), degree (gradual or steep), and the extent of variability of data points around the trend. Trend is used in predicting future measures of the behavior under unchanging conditions.

### Trials to criterion

A special form of event recording; a measure of the number of responses or practice opportunities needed for a person to achieve a pre-established level of accuracy or proficiency.

### True value

A measure accepted as a quantitative description of the true state of some dimensional quantity of an event as it exists in nature. Obtaining true value requires “special or extraordinary precautions to ensure that all possible sources of error have been avoided or removed” (Johnston & Pennypacker, 1993).

### Validity

The extent to which data obtained from measurement are directly relevant to the target behavior of interest and to the reason(s) for measuring it.

### Variability

The frequency and extent to which multiple measures of behavior yield different outcomes

### Whole interval recording

A time sampling method for measuring behavior in which the observation period is divided into a series of brief time intervals (typically from 5 to 15 seconds). At the end of each interval, the observer records whether the target behavior occurred throughout the entire interval; tends to underestimate the overall percentage of the observation period in which the target behavior actually occurred.

## D. Experimental Design

D.1. Create operational definitions of behavior.
D.2. Distinguish among direct, indirect, and product measures of behavior.
D.3. Measure occurrence.
D.4. Measure temporal dimensions of behavior (e.g., duration, latency, inter-response time).
D.5. Distinguish between continuous and discontinuous measurement procedures.
D.6. Design and apply discontinuous measurement procedures (e.g., interval recording, time sampling).
D.7. Measure efficiency (e.g., trials to criterion, cost-benefit analysis, training duration).
D.8. Evaluate the validity and reliability of measurement procedures.
D.9. Select a measurement procedure to obtain representative data that accounts for the critical dimension of the behavior and environmental constraints.
D.10. Graph data to communicate relevant quantitative relations (e.g., equal-interval graphs, bar graphs, cumulative records).
D.11. Interpret graphed data. C.12. Select a measurement procedure to obtain representative procedural integrity data that accounts for relevant dimensions (e.g., accuracy, dosage) and environmental constraints.

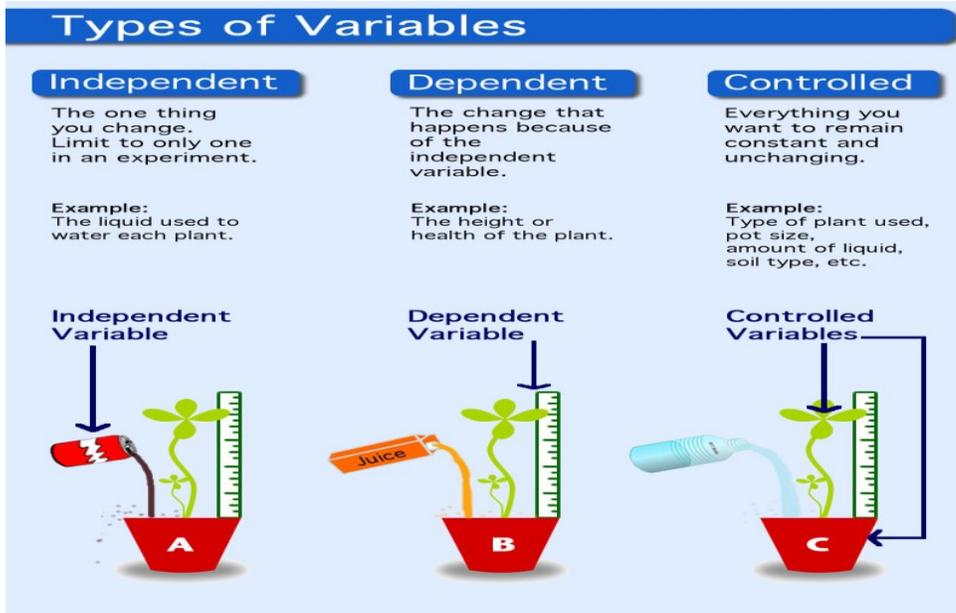
**D.1. Distinguish between dependent and independent variables.**

1. Independent Variable: The independent variable is the factor or condition that is deliberately manipulated or changed by the researcher. It is the variable that the researcher believes has an effect on the dependent variable. The independent variable is often denoted as "X" in mathematical equations.

Example question: How does the dosage of a medication (independent variable) affect the recovery time from a specific illness (dependent variable)?

2. Dependent Variable: The dependent variable is the variable that is measured or observed in response to changes in the independent variable. It is the outcome or result that the researcher is interested in studying. The dependent variable is often denoted as "Y" in mathematical equations.

Example question: Does the amount of water (independent variable) affect the growth rate of plants (dependent variable)?



3. Control Variable: Additionally, it's important to mention control variables. Control variables are factors that are held constant or are not changed throughout the experiment. By controlling these variables, researchers can ensure that any observed effects are due to the independent variable and not to other factors.

Example question: How does temperature (independent variable) affect the rate of a chemical reaction (dependent variable), while keeping the concentration of reactants (control variable) constant?

Quiz: Answer if it is the Independent, Dependent or the Control:

1. In a study on the effect of sunlight on plant growth, what is the independent variable?
2. In an experiment measuring how different fertilizers affect crop yield, what is the dependent variable?
3. In a clinical trial testing a new drug, what acts as the control variable?
4. When researching how temperature affects the speed of a chemical reaction, what is the independent variable?
5. In a study exploring how exercise impacts heart rate, what is the dependent variable?
6. What could be a control variable in an experiment examining the impact of sleep on test performance?
7. In an investigation of the effect of caffeine on concentration, which variable is independent?
8. If you are measuring the impact of study time on exam scores, what is the dependent variable?
9. What type of variable is kept constant when studying the effects of different teaching methods on student performance?
10. In a study that looks at the influence of water quality on fish health, what would the independent variable be?

## **D.2. Distinguish between internal and external validity.**

Validity in Applied Behavior Analysis (ABA)

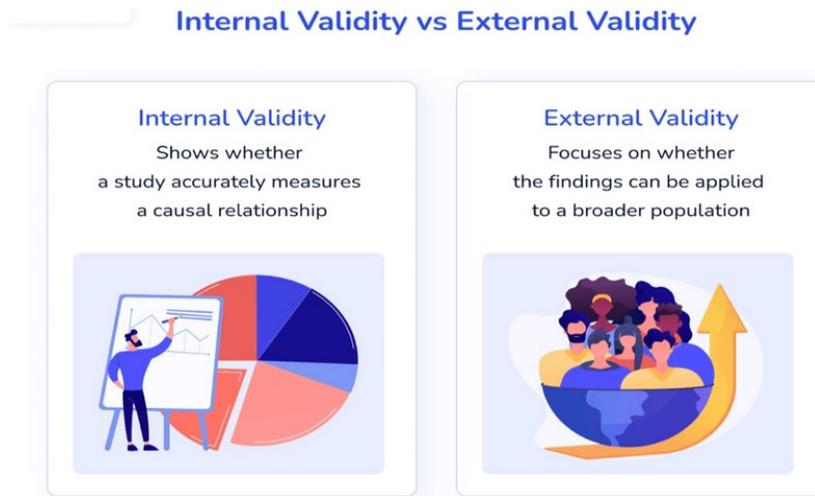
Introduction to Validity

In the context of research and applied behavior analysis, validity refers to the extent to which a study accurately measures what it intends to measure. Understanding validity is crucial for interpreting the results of behavioral interventions and ensuring that conclusions drawn from data are meaningful and applicable.

Internal Validity: Strong Relationship with IV and DV

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Definition: Internal validity refers to the degree to which the results of a study can be attributed to the interventions or treatments applied, rather than to other confounding variables. High internal



validity indicates that a study can demonstrate a clear cause-and-effect relationship between an independent variable (the intervention) and a dependent variable (the behavior change).

Example in ABA:

Consider a study evaluating the effect of a structured reinforcement schedule on increasing on-task behavior in a classroom. If students significantly increase their on-task behavior when the reinforcement schedule is implemented and there are rigorous controls in place (such as consistent application of the schedule, monitoring for external influences, and using the same classroom conditions), the study would have high internal validity. However, if a teacher also changed their instructional methods simultaneously, it could introduce confounding factors, weakening internal validity.

External Validity: When research has been designed that it demonstrates the ability to be generalized to new people, settings and possible behaviors.

Definition: External validity refers to the extent to which the findings of a study can be generalized to settings, populations, and time periods beyond the specific conditions of the study. High external validity enhances the applicability of research findings to real-world situations.

Example in ABA:

Suppose researchers conduct a behavioral intervention to reduce aggressive behaviors among children with autism in a special education setting and find successful outcomes. However, if the study was conducted only in one classroom of a specific school with

## Measurement Confounds in Applied Behavior Analysis

### Introduction to Measurement Confounds

Measurement confounds can undermine the integrity of research and interventions in applied behavior analysis (ABA). These confounds can lead to inaccuracies in data collection, interpretation, and conclusions about behavior change and effectiveness of interventions. Understanding these confounds is essential for conducting rigorous behavioral research and ensuring that findings are valid and reliable.

#### 1. Observer Bias

**Definition:** Observer bias occurs when a researcher's expectations, beliefs, or prior experiences influence their observations and data collection. This can lead to biased interpretations of behavior.

**Example:** If an observer believes that a particular intervention will result in significant improvement, they may unconsciously report more positive outcomes than are warranted. It is crucial to train observers and use objective measurement tools to minimize this bias.

#### 2. Subject Confounds

**Definition:** Subject confounds arise when individual characteristics of participants inadvertently affect the results of a study. These can include differences in motivation, prior learning experiences, or other personal factors.

**Example:** In a study measuring responses to a reinforcement strategy, if one participant has prior experience with similar strategies, their reactions may differ from those without such experience, influencing the overall study results.

#### 3. Setting Confounds

**Definition:** Setting confounds refer to variables related to the environment where the study takes place that may affect the outcomes. Changes in the setting can lead to variability in participant behavior.

**Example:** If an intervention is implemented in a noisy classroom versus a calm one, the different settings may influence behavior unrelated to the intervention itself, leading to confounded results.

#### 4. Bootleg Reinforcement

Definition: Bootleg reinforcement occurs when participants receive reinforcement for a behavior from sources outside of the experimental context, potentially invalidating results.

Example: If students are rewarded outside of the study for completing homework, it may affect their behavior in the study and lead to inflated results regarding the effectiveness of the intervention aimed at increasing homework completion.

#### 5. Extraneous Variables

Definition: Extraneous variables are uncontrolled variables that can affect the dependent variable in a study, potentially confounding results.

Example: If a study is measuring the effectiveness of a behavior intervention while a major school event (such as a holiday party) is occurring, the excitement and disruption caused by this event can influence student behavior independently of the intervention.

#### 6. Inter-Subject Direct Replication

Definition: Inter-subject direct replication involves repeating a study with different subjects to verify the results. This helps to determine if findings are consistent across individuals.

Example: After finding success with one group of students using a specific intervention, the same intervention is applied to a different group to see if similar results are observed.

#### 7. Intra-Subject Direct Replication

Definition: Intra-subject direct replication means repeating the same intervention with the same subject under similar conditions to confirm findings.

Example: If a behavioral intervention is successful for a particular student, the procedure is repeated with that student at a later time to see if the behavior change is replicated.

#### 8. Systematic Replication

Definition: Systematic replication involves modifying conditions of a study to test the robustness of the original findings while still maintaining the core elements of the intervention.

Example: Researchers might vary the reinforcement type or schedule in a study while applying the same intervention principles to see if the outcomes are consistent.

#### 9. False Positive and False Negative Errors

**False Positive Error:** A false positive occurs when a study incorrectly indicates that an effect exists when it does not, often due to confounding factors or biases.

**Example:** An observer might report a significant behavior change after an intervention, but this change may be due to an unaccounted variable, such as staff attention.

**False Negative Error:** A false negative occurs when a study fails to detect an effect that is present. This can happen due to insufficient sensitivity in measurement or the timing of observations.

**Example:** An intervention designed to reduce aggressive behaviors might show no significant changes if data collection coincides with a particularly calm period for the subjects, leading researchers to incorrectly conclude that the intervention was ineffective.

References:

Quiz on Validity:

How might observer bias affect the outcomes of an ABA study, and what strategies can researchers employ to mitigate its impact?

In what ways can setting confounds alter the interpretation of behavior change in an ABA intervention?

Can you explain the difference between inter-subject and intra-subject direct replication, and why each is important for validating research findings in ABA?

Discuss how bootleg reinforcement could potentially skew results in a study evaluating the effectiveness of a behavior intervention. What steps could be taken to control for this variable?

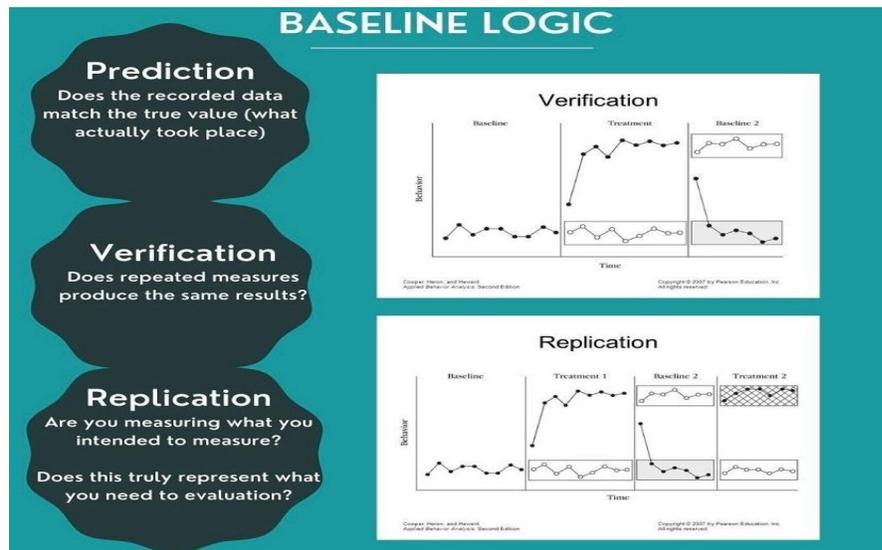
Describe a scenario in which a false negative error might occur in an ABA study, and what implications this could have for the perceived effectiveness of an intervention.



**D.3. Identify threats to internal validity (e.g., history, maturation).**

- History: Events occurring outside the study that can influence participants’ behaviors. For example, a significant event (like a school closure) could affect students' behavior unrelated to the intervention.
- Maturation: Changes in participants over time that could affect their behavior, such as natural development or aging. For instance, a child may improve in social skills simply due to growing older, rather than due to an intervention.
- Testing: The effect of taking a test on subsequent performances. If a behavior is measured before and after an intervention, improvements may result from familiarity with the testing procedures rather than the intervention itself.
- Instrumentation: Changes in measurement instruments or procedures over time that could affect outcomes. This could include variations in the way data collectors are trained or differences in assessment tools used during the study.
- Statistical Regression: The tendency for extreme scores to move closer to the average on subsequent measurements. This could misleadingly suggest that an intervention has had an effect when it is actually just a statistical artifact.
- Selection Bias: Systematic differences between groups being compared. If participants are not randomly assigned, pre-existing differences may account for observed effects rather than the intervention itself.
- Mortality (Attrition): Loss of participants during a study that can skew results. If participants who drop out are systematically different from those who remain, the findings may not accurately reflect the entire population.
- Diffusion of Treatment: When participants in different groups inadvertently share information about the intervention, leading to changes in behavior in the control group as well.

- Compensatory Rivalry: Participants in a control group may change their behavior in response to being aware of the experimental group's treatment, attempting to outperform them.
- Resentful Demoralization: Control group participants may feel demoralized or less motivated if they believe they are receiving no treatment, which could alter their behavior.



**D.4. Identify the defining features of single-case experimental designs (e.g., individuals serve as their own controls, repeated measures, prediction, verification, and replication)**

Defining Features of Single-Case Experimental Designs

Introduction to Single-Case Experimental Designs

Single-case experimental designs (SCEDs) are a research methodology commonly used in Applied Behavior Analysis (ABA) to evaluate the effects of interventions on individual participants. These designs are particularly valuable in clinical settings where the focus is on individual behavior change rather than group averages. The defining features of SCEDs facilitate robust analysis and evidence of functional relationships between interventions and behavioral outcomes.

Defining Features

Individuals Serve as Their Own Controls

In single-case designs, the same individual is used as both the treatment and control subject. This means that each participant's behavior is observed under both baseline (pre-intervention) and

intervention conditions. By using the individual as their own control, researchers can more effectively account for personal variability and extraneous factors influencing behavior.

#### Repeated Measures

Single-case designs involve repeated measurement of the dependent variable over time. This approach allows researchers to gather multiple data points, enabling them to observe trends, variability, and patterns in behavior. Repeated measures enhance the reliability and sensitivity of detecting changes in behavior that may occur as a result of the intervention.

#### Prediction

Prediction is a crucial aspect of SCEDs, where researchers formulate hypotheses about the expected outcomes of an intervention. Through careful analysis of baseline data, researchers can predict how the participant's behavior will change once the intervention is implemented. This predictive capability forms the basis for assessing the intervention's effectiveness.

#### Verification

Verification involves demonstrating that any observed changes in behavior following the introduction of the intervention are indeed the result of the intervention itself, rather than other factors. In single-case designs, this is typically achieved by withdrawing the intervention (reversal design) or restoring baseline conditions, and observing whether the behavior returns to its original state. Successful verification supports the causal relationship between the intervention and changes in behavior.

#### Replication

Replication in single-case designs can take place across different phases of the study or across different individuals. By repeating the intervention or assessment with the same individual or with other participants, researchers can strengthen the evidence of the intervention's effectiveness. Successful replication enhances the generalizability of findings and supports the reliability of the results.

### **D.5 & D.6. Identify the relative strengths and limitations of single-case experimental designs and group designs.**

#### Strengths and Limitations of Single-Case Experimental Designs and Group Designs

##### Single-Case Experimental Designs

Strengths:

**Individual Focus:** Single-case experimental designs (SCEDs) allow for an in-depth analysis of individual behavior. This focus enables practitioners to tailor interventions to meet the specific needs of each participant, making it particularly useful in clinical and educational settings.

**Flexibility:** SCEDs can be adapted easily to accommodate various behaviors, settings, and participants. Researchers can modify the design based on real-time observations and results, allowing for timely adjustments to interventions.

**Functional Relationship Analysis:** SCEDs provide strong evidence for causal relationships between interventions and behavior changes. By using within-subject controls, researchers can more convincingly demonstrate that observed changes are a direct result of the intervention implemented.

**Ethical Considerations:** In some cases, it may be unethical to withhold treatment from a participant who needs it; SCEDs allow researchers to evaluate behavior while ensuring that individuals benefit from interventions throughout the study.

**Rich Data Collection:** The repeated measures inherent to SCEDs generate a wealth of data, yielding detailed insights into trends, variability, and patterns in individual behavior over time.

Limitations:

**Generalizability:** The findings from SCEDs may have limited generalizability to broader populations since they focus on individual cases. Interventions that work for one individual may not be effective for others.

**Small Sample Size:** Single-case designs typically involve a limited number of participants, which may reduce statistical power and increase the potential for the influence of outlier data.

**Time-Consuming:** Conducting SCEDs can be labor-intensive and time-consuming, as they often require extended periods of observation and data collection before, during, and after interventions.

**Complex Analysis:** The analysis of single-case data can be complex due to variability in individual responses. Researchers must employ robust statistical methods to confidently interpret results.

Group Designs

Strengths:

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**Generalizability:** Group designs allow researchers to assess interventions on larger populations, enhancing the ability to generalize findings to wider groups. This can lead to greater confidence in the applicability of results.

**Statistical Power:** By including a larger number of participants, group designs can achieve higher statistical power, allowing for more robust conclusions regarding the effectiveness of an intervention.

**Control of Extraneous Variables:** Randomization and control groups in group designs can help mitigate the effects of confounding variables, leading to clearer causal inferences about the relationship between interventions and outcomes.

**Standardized Procedures:** Group designs often follow rigorous protocols and standardized procedures, which can lead to consistency and replicability in research findings.

**Efficiency:** Group designs allow for quicker data collection and analysis across multiple participants simultaneously, making them more efficient in certain situations.

**Limitations:**

**Aggregate Data:** Group designs focus on group averages, which may mask individual differences in response to treatment. This can lead to misinterpretation of the effectiveness of an intervention for any specific individual.

**Less Individualized Interventions:** Interventions in group designs are generally standardized and may not address the unique needs of all participants, potentially leading to less effective outcomes for individuals.

**Confounding Variables:** Even with randomization, group designs can still be affected by confounding variables that introduce bias into the results. External factors may influence outcomes without being accounted for.

**Ethical Concerns:** In some cases, withholding treatment from a control group may raise ethical dilemmas, especially if the treatment is known to be effective.

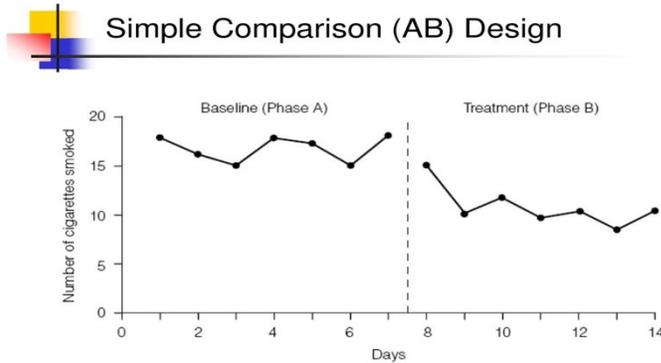
### **D.7. Distinguish among reversal, multiple-baseline, multi-element, and changing-criterion designs.**

Distinctions among Reversal, Multiple-Baseline, Multi-element, and Changing-Criterion Designs

Single-case experimental designs comprise various methodologies, each suited to different research questions and contexts. The following sections outline four common designs: reversal,

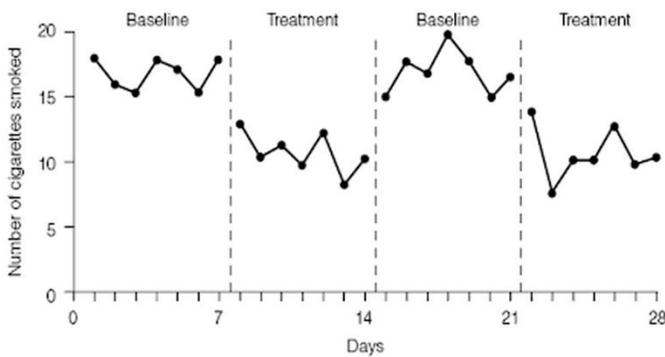
multiple-baseline, multi-element, and changing-criterion designs, highlighting their strengths and limitations.

Prior to these designs you would have simple or AB comparison design.



1. Reversal Design (ABAB Design)

**Reversal / (ABAB) Design**



Definition:

Reversal design involves alternating between baseline (A) and intervention (B) phases. The participant's behavior is measured during the baseline phase, followed by the introduction of the

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intervention. After observing behavior changes, the intervention is withdrawn to assess whether the behavior reverts back to baseline levels before the intervention is reinstated.

Strengths:

**Demonstrates Causality:** The clear alternation between baseline and intervention phases helps establish a strong causal relationship, showing that changes in behavior are directly attributable to the intervention.

**Simple and Easy to Implement:** The design is straightforward, making it accessible for many researchers and practitioners.

Limitations:

**Ethical Concerns:** Withdrawing an effective intervention may pose ethical dilemmas, especially if the participant benefits from the treatment.

**Not Suitable for All Behaviors:** Some behaviors may not revert to baseline levels after the intervention is removed, complicating the interpretation of results.

## 2. Multiple-Baseline Design

**MULTIPLE BASELINE SINGLE SUBJECT DESIGN**

**MULTIPLE BASELINE**

**Design Features**

- No withdrawal/reversal
- Highly flexible & easy to use
- Stability in baseline is necessary
- Time & cost is high. Requires a great deal of resources & delays to treatment
- Vicarious reinforcement/spillover effects across subjects
- DV must be functionally similar to and independent from one another

**Experimental Control**

- Replication of results across subjects, settings or behaviors

**Visual Feature**

- Stacked AB graphs
- Implementation of IV in a staggered fashion

**Weaker Variations**

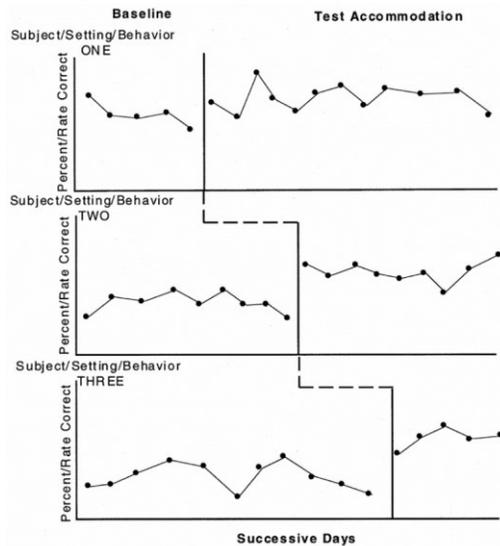
- Multiple Probe Design
- Delayed Multiple Baseline

**Multiple Probe Design**

- Probe used to intermittently measure target bx during baseline, when learning is unlikely to occur without treatment
- Not appropriate for bx with significant variability

**Delayed Multiple Baseline**

- Used when reversal is no longer possible
- Limited Resources are available
- New setting, subject or behavior becomes available



**Definition:**

Multiple-baseline designs involve staggering the introduction of the intervention across two or more behaviors, individuals, or settings. Data is collected across baseline conditions before the intervention is applied sequentially, allowing researchers to observe changes in behavior relative to the timing of the intervention.

**Strengths:**

**Ethical Considerations:** Since the intervention is never entirely withdrawn, multiple-baseline designs are more ethical, particularly when dealing with beneficial interventions.

**Addresses Variability:** This design helps control for confounding factors by comparing changes in behavior across different baselines, enhancing internal validity.

**Limitations:**

**Time-Consuming:** Multiple-baseline designs require a longer time commitment to collect data across multiple phases.

**Potential for Interaction Effects:** The introduction of the intervention in one condition may inadvertently affect the behavior in another condition due to shared contextual factors.

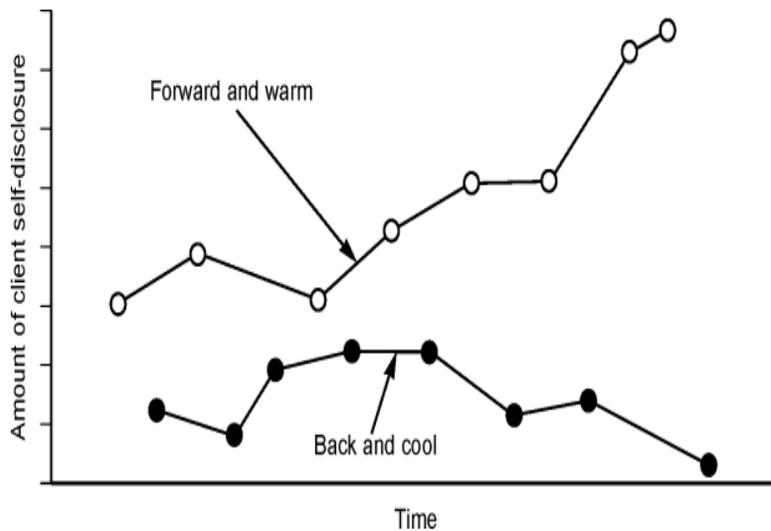
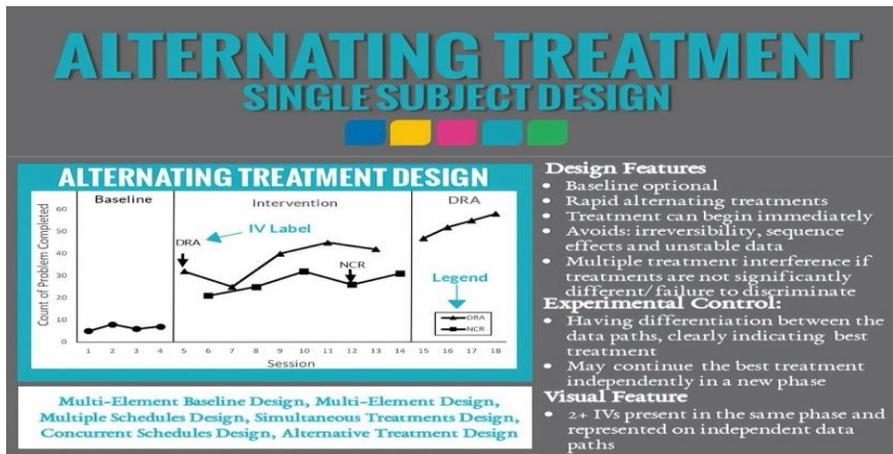
**3. Multi-element Design (Alternating Treatment Design)**

**Definition:**

Multi-element or Alternating Treatment designs involve the simultaneous or alternating presentation of two or more interventions (or conditions) to compare their effects on behavior.

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Typically, a baseline phase is established, followed by the introduction of different interventions in quick succession.



Strengths:

**Quick Comparison:** This design allows for rapid comparison of multiple treatments within a single study, facilitating efficient evaluation of intervention effectiveness.

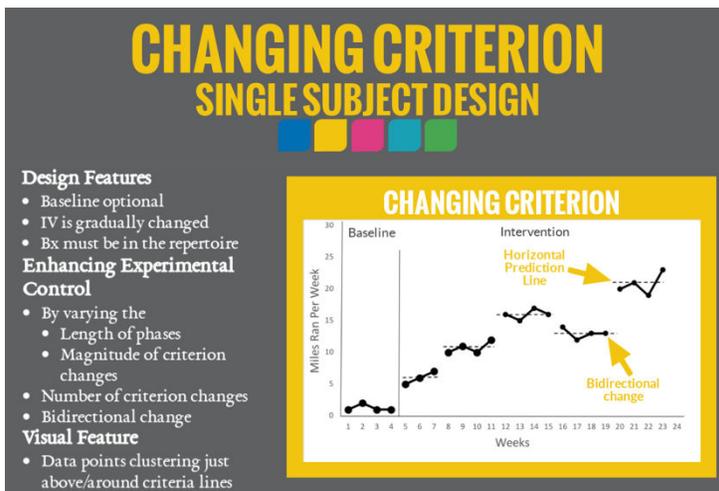
**Minimizes Variability:** By alternating treatments frequently, researchers can control for potential confounding variables that may affect behavior during the study.

Limitations:

Potential Carryover Effects: Changes in behavior in response to one treatment may persist and influence subsequent measures when a different intervention is introduced, complicating conclusions.

Complex Analysis: Analyses can become complex due to the introduction of multiple conditions, requiring careful statistical consideration.

#### 4. Changing-Criterion Design



#### Definition:

Changing-criterion designs involve establishing a series of performance criteria that are progressively changed over time. The intervention is applied continuously, and the behavior is measured to see if it meets each new criterion as it is introduced.

#### Strengths:

Gradual Behavior Change: This design is especially useful for teaching behaviors in gradual steps and allows for flexibility in defining what constitutes success over time.

Clear Progress Monitoring: Researchers can assess behavioral progress and make adjustments based on how well the participant meets criteria.

#### Limitations:

Requires Stable Baseline: A strong baseline must be established to ensure that changes in behavior can be attributed to the intervention rather than pre-existing trends.

Limited Applicability: This design is best suited for behaviors that can be scaled or measured incrementally, limiting its use for behaviors requiring immediate change.

#### Development of a Changing-Criterion Design

##### Identify the Target Behavior:

The first step is to clearly define the behavior you want to change. This could be an increase in desirable behaviors (e.g., the number of homework assignments completed) or a decrease in undesirable behaviors (e.g., aggressive incidents).

##### Establish a Baseline:

Collect baseline data on the frequency, duration, or intensity of the target behavior over a set period. This provides a clear picture of current levels of the behavior and establishes a point of reference for subsequent comparisons.

##### Set Initial Criterion:

Based on baseline data, set an initial performance criterion that the participant must meet. This criterion can initially be based on the participant's current average performance, slightly above or below it, depending on whether the goal is to increase or decrease the behavior.

##### Implement the Intervention:

Introduce the intervention while the participant is working to meet the initial criterion. Continuous measurement of the target behavior should be conducted during this phase.

##### Monitor Progress:

Collect data on how well the participant meets the established criterion. The data should be continuously monitored to determine if the behavior is changing as intended.

##### Adjust Criteria:

Once the participant has consistently met the initial performance criterion for a predetermined duration, gradually increase or decrease the criterion to set a new goal. Adjustments should be made based on the participant's ability to maintain the desired behavior. This process can be repeated several times, with each change designed to push the participant further toward the ultimate behavior goal.

##### Reinforcement:

Use reinforcement strategies to encourage participants to meet the changing criteria. Immediate reinforcement upon achieving each criterion strengthens the desired behavior and promotes motivation throughout the process.

Evaluation:

Evaluate the overall effectiveness of the intervention and the changing-criterion design by comparing the final behavior levels against the baseline measures. Assess whether the gradual changes helped to reinforce the positive behavior over time and led to sustained behavior modification

## **CHANGING CRITERION**

### **SINGLE SUBJECT DESIGN**

#### **Design Features**

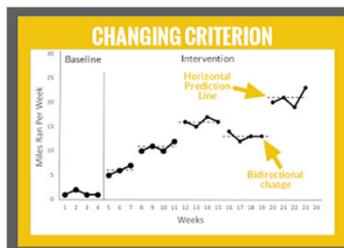
- Baseline optional
- IV is gradually changed
- Behaviors must be in the repertoire

#### **Enhancing Experimental Control**

- By varying the length of phases
- Magnitude of criterion changes
- Number of criterion changes
- Bidirectional change

#### **Visual Feature**

- Data points clustering just above or around criteria lines

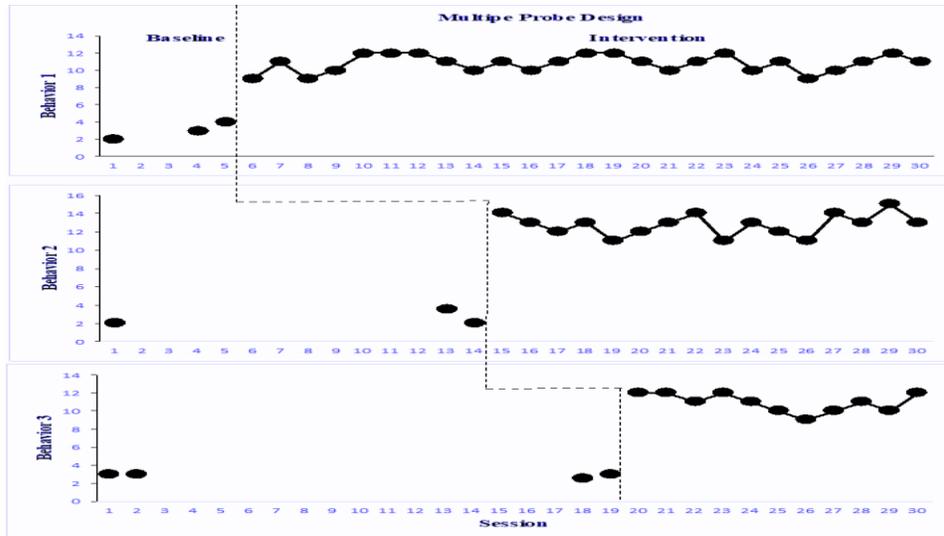


Multiple Probe Design: Explanation and Application

Definition of Multiple Probe Design

Multiple probe design is a type of single-case experimental design used to evaluate the effectiveness of an intervention across multiple behaviors, participants, or settings, particularly when continuous baseline data collection is impractical or unnecessary. In this design, intermittent probes (measurements) of the target behavior are taken during baseline phases, followed by the implementation of the intervention.

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### Why Use Multiple Probe Design?

**Practicality:** It is particularly beneficial when behaviors are difficult to measure continuously, as probing allows for selective data collection without requiring constant observation.

**Focus on Acquisition:** This design is useful for evaluating skills that are acquired at different rates, allowing for a focus on the effectiveness of an intervention over time.

**Reduction of Assessment Burden:** By using probes rather than continuous measurement, the demand on the participant and the researcher is reduced, making it more manageable to collect data.

### When to Use Multiple Probe Design

**Skill Acquisition in Phases:** Use multiple probe design when teaching multiple behaviors, and the goal is to implement the intervention in stages rather than all at once.

**Limited Resources:** When observing every instance of a behavior is not feasible (e.g., due to time constraints or resource limitations), multiple probe design can alleviate data collection burdens.

**Baseline Variability:** If individual differences exist in baseline levels of performance or if implementing a continuous baseline would not yield useful data, multiple probe design allows for selective measurement.

### Example Case for Multiple Probe Design

Case Scenario: Teaching Social Skills to Children with Autism

Context:

A behavior analyst is working with a group of children with autism who require instruction in social skills, including sharing, initiating conversations, and making eye contact. The analyst wants to evaluate the effectiveness of a social skills training program across these three target behaviors.

Implementation:

Identify Target Behaviors:

Behavior 1: Sharing

Behavior 2: Initiating conversations

Behavior 3: Making eye contact

Establish Baselines:

Baseline data is collected intermittently (through probes) for each behavior over a period of time. For example, data might be collected on each behavior once per week for a few weeks.

Implement Intervention:

The intervention is introduced sequentially, starting with the first behavior (sharing). Following a set period during which the effectiveness is assessed, the second behavior (initiating conversations) is introduced, and finally, the third behavior (making eye contact).

Probe Configuration:

During the baseline phase, data might be collected on both initiating conversations and making eye contact only intermittently, while continuous data collection for sharing occurs when that behavior is being actively taught.

Monitoring and Adjustment:

The analyst monitors progress for each behavior and adjusts the intervention as needed. Once the intervention shows an effect for sharing, the probe data is collected for initiating conversations, and that behavior intervention is introduced.

Outcome:

If the children demonstrate improved social skills with the first behavior before moving on to the next, the multiple probe design verifies that the intervention is effective and helps assess the independent effects of the intervention for each social skill being taught.

## Multiple Probe Design

- Analyzes relation between independent variable and acquisition of skill sequences
- Instead of simultaneous baselines, probes provide basis for determining if behavior change has occurred prior to intervention
- Appropriate for analyzing a shaping program

### **D.8. Identify rationales for conducting comparative, component, and parametric analyses.**

#### Rationale for Conducting Comparative, Component, and Parametric Analyses in Applied Behavior Analysis

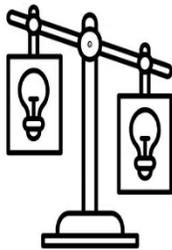
In the field of Applied Behavior Analysis (ABA), researchers and practitioners often utilize various analytical methods to assess the effectiveness of interventions.

Three common approaches are comparative analyses, component analyses, and parametric analyses. Each serves a unique purpose in understanding behavior and tailoring interventions, and they are employed based on specific research questions or practical needs.

#### 1. Comparative Analysis

##### Definition:

Comparative analysis involves evaluating the effectiveness of two or more intervention strategies to determine which one has a greater impact on behavior. This type of analysis compares the outcomes of different treatment conditions to identify the most effective intervention.



### **Comparative Analysis**

The process of comparing and contrasting entities, variables, or phenomena to uncover insights.

When to Use:

Comparative analyses are used when there are multiple interventions available, and the goal is to determine which one yields better results. This is particularly useful when deciding between established treatments or approaches.

Example:

A researcher is interested in determining whether positive reinforcement or a token economy is more effective in increasing on-task behavior in a classroom setting for students with attention-deficit hyperactivity disorder (ADHD). The researcher designs a study comparing the two interventions side by side, measuring the frequency of on-task behaviors under each condition. By analyzing the data, the researcher can identify which intervention leads to greater improvements, providing evidence to inform future practice.

## 2. Component Analysis

Definition:

Component analysis involves breaking down an intervention into its individual components to assess which elements contribute most significantly to the overall effectiveness of the treatment. This type of analysis allows practitioners to understand the specific mechanisms of an intervention and enhance or modify its effectiveness.

# Component Analysis



*Which part worked best?*

When to Use:

Component analyses are used when assessing a multi-faceted intervention with various elements. They are helpful when a practitioner wants to determine how each component contributes to changes in behavior.

Example:

Consider a self-management intervention designed to help students improve their study habits, which consists of three components: self-monitoring, goal-setting, and self-reinforcement. A researcher may conduct a component analysis by first assessing the effects of self-monitoring alone, then the effects of adding goal-setting, and finally examining how self-reinforcement

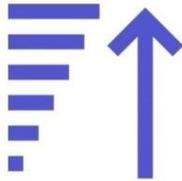
influences outcomes. By iteratively modifying the intervention and assessing behavior changes, the researcher can pinpoint which components are essential for increasing effective study habits.

### 3. Parametric Analysis

Definition:

Parametric analysis refers to the evaluation of the effectiveness of an intervention by systematically varying one feature of the intervention to determine how changes in that parameter affect the outcome. This allows researchers to identify optimal conditions, such as the intensity or frequency of an intervention.

## Parametric Analysis



*What dosage worked best?*

When to Use:

Parametric analyses are used when there is a need to understand how different levels of an intervention (e.g., dosage, duration, or intensity) impact behavioral outcomes. This approach is vital for optimizing interventions for individual needs.

Example:

A researcher is examining the effects of a reinforcement schedule on student performance in a math tutoring program. The researcher designs a parametric analysis to compare different reinforcement schedules, such as continuous reinforcement, fixed-ratio reinforcement, and variable-ratio reinforcement. By systematically varying the type and frequency of reinforcement, the researcher evaluates how each schedule influences students' engagement and performance in mathematics. The findings inform educators on the most effective reinforcement strategies for enhancing academic achievement.

# EXPERIMENTAL ANALYSIS

Parametric Analysis	Nonparametric Analysis	Component Analysis
		
The <u>value</u> of the independent variable or an element of the independent variable is manipulated.	Independent variable is either included or not. The intervention is <u>on or off</u> .	Test one component of the treatment package at time in order to determine if it is necessary.
●●●●●●●● FT- 2 Minutes NCR FT- 3 Minutes NCR FT- 4 Minutes NCR	●●●●●●●● Visual Scedule Used No Visual Schedule Visual Schedule Used	●●●●●●●● NCR, DRA & Extinction NCR & DRA NCR

## D.9. Apply single-case experimental designs.

### Single Subject Research Design

#### Definition:

Single Subject Research Design (SSRD) is a methodology used primarily in applied behavior analysis (ABA) and other behavioral sciences to evaluate the effects of interventions on individual participants. Unlike traditional group designs, SSRD focuses on the individual as the unit of analysis, allowing researchers and practitioners to observe how specific interventions affect the behavior of one participant over time. This design emphasizes the dynamic and individualized nature of behavioral assessment and treatment.

#### Types of Single Subject Research Designs

##### Reversal Design (ABAB):

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Alternates between baseline and intervention phases to demonstrate the effects of the intervention on behavior.

### Multiple Baseline Design:

Introduces the intervention at different times across behaviors, individuals, or settings, allowing for comparison of the effects over time.

### Multi-element Design:

Compares two or more interventions by alternating them rapidly, assessing their relative effectiveness.

### Changing-Criterion Design:

Gradually introduces new criteria for success within the intervention phase, allowing for stepwise behavior modification.

### How to Apply Single-subject research design

#### Applying Single-Case Experimental Design Correctly

Single-case experimental design (SCED) is a powerful methodology employed in Applied Behavior Analysis (ABA) to assess the effectiveness of interventions on individual participants. Proper application and implementation of SCED involve several critical steps to ensure validity, reliability, and ethical considerations. Below, we outline the key steps to effectively apply and implement SCEDs.

#### 1. Define the Target Behavior

##### Action:

Clearly define the behavior to be assessed or modified. The definition should be precise, observable, and measurable. This clarity ensures consistency in data collection and observation.

##### Example:

Instead of stating "improve social skills," define the behavior specifically as "initiating a conversation with a peer for at least 3 minutes."

#### 2. Establish Baseline Data

##### Action:

Collect baseline data on the target behavior prior to implementing the intervention. This involves observing the participant in their natural environment and measuring the frequency, duration, or intensity of the behavior over a specified period.

Example:

Observe the participant's ability to initiate conversations across several sessions for a baseline period of two weeks, recording how often this behavior occurs.

### 3. Design the Intervention

Action:

Develop a detailed intervention plan based on the assessed needs of the participant. The plan should include specific strategies, materials, and reinforcement procedures to be used.

Example:

Create a social skills training program that includes role-playing, modeling appropriate conversation starters, and providing positive reinforcement when the participant successfully initiates conversations.

### 4. Implement the Intervention

Action:

Apply the intervention while continuing to measure the target behavior. Follow the intervention plan precisely to maintain consistency and fidelity in implementation.

Example:

After establishing the baseline, start the social skills training program and continue to measure how many times the participant initiates conversations over a set period (e.g., daily for four weeks).

### 5. Use Repeated Measures

Action:

Collect data on the target behavior repeatedly throughout the intervention to assess any changes in performance. Use the data to analyze trends and patterns over time.

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Example:

Record conversation initiation frequency weekly and create a visual display (e.g., a graph) to track changes over the course of the intervention.

### 6. Implement Withdrawal or Reversal (if appropriate)

Action:

For certain designs, such as the reversal design (ABAB), withdraw the intervention after a period of implementation to observe if the behavior returns to baseline levels. This helps to verify the effectiveness of the intervention.

Example:

After four weeks of the social skills training, remove the intervention for two weeks and monitor if the participant's conversation initiation frequency reduces back to baseline levels.

### 7. Analyze the Data

Action:

Review the data collected throughout the study. Look for trends such as increases or decreases in the target behavior, and consider the effect size or significance of the changes observed.

Example:

Analyze whether there is a significant increase in conversation initiation during the intervention compared to the baseline phase and whether it returns to baseline upon withdrawal.

### 8. Draw Conclusions and Make Recommendations

Action:

Based on the data analysis, conclude whether the intervention was effective in altering the target behavior. Make recommendations for future practice, including continuing, modifying, or expanding the intervention.

Example:

If data shows significant improvement during the intervention, suggest ongoing implementation with potential adjustments based on the participant's progress.

## 9. Maintain Ethical Considerations

### Action:

Ensure that the intervention is ethical and designed with the well-being of the participant in mind. Informed consent should be obtained, and participants should have the right to withdraw from the study at any time.

### Example:

Provide thorough information about the intervention to the participant and guardians, ensuring they understand the purpose, procedure, and possible risks involved.

## Key Features of Single Subject Research Design

### Individual Focus:

Each subject in the study serves as their own control. This means that the individual's baseline behavior is compared to their behavior during the intervention phases. Observations are tailored to the unique characteristics of the participant.

### Repeated Measures

Data is collected repeatedly over time, allowing for Monitoring of behaviors across baseline and intervention phases. This frequent measurement enables researchers to detect changes promptly and determine the effectiveness of the intervention.

### Visual Analysis:

Data is often presented graphically, using visual representations such as line graphs to illustrate trends, level changes, and variability in behavior over time. This visual analysis helps in interpreting results in a clear and straightforward manner.

### Multiple Phases:

SSRD typically involves multiple phases, including baseline (A), intervention (B), and often a return to baseline (A again) to ascertain whether behavior changes can be attributed to the intervention. Variations of this design can have multiple interventions or changes in criteria.

### Flexibility:

The design allows for modifications based on the participant's response. If the intervention is not effective, adjustments can be made to better meet the participant's needs

#### A-B design

A two-phase experimental design consisting of a pretreatment baseline condition (A) followed by a treatment condition (B).

#### A-B-A design

A three-phase experimental design, consisting of an initial baseline phase (A) until steady state responding (or counter-therapeutic trend) is obtained, an intervention phase in which the treatment condition (B) is implemented until the behavior has changed and steady state responding is obtained, and a return to baseline conditions (A) by withdrawing the independent variable to see whether responding “reverses” to levels observed in the initial baseline phase.

#### A-B-A-B design

An experimental design consisting of (1) an initial baseline phase (A) until steady state responding (or counter-therapeutic trend) is obtained, (2) an initial intervention phase in which the treatment variable (B) is implemented until the behavior has changed and steady state responding is obtained, (3) a return to baseline conditions (A) by withdrawing the independent variable to see whether responding “reverses” to levels observed in the initial baseline phase, and (4) a second intervention phase (B) to see whether initial treatment effects are replicated.

Baseli ne	lo gi c	A term sometimes used to refer to the experimental reasoning inherent in single-subject experimental designs; entails three elements: prediction, verification, and replication.
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#### Changing-criterion design

An experimental design in which an initial baseline phase is followed by a series of treatment phases, consisting of successive and gradually changing criteria for reinforcement or punishment. Experimental control is evidenced by the extent the level of responding changes to conform to each new criterion.

#### Component analysis

Any experiment designed to identify the active elements of a treatment condition, the relative contributions of different variables in a treatment package, and/or the necessary and sufficient components of an intervention. Component analyses take many forms, but the basic strategy is to compare levels of responding across successive phases in which the intervention is implemented with one or more components left out.

Confounding variable

An uncontrolled factor known or suspected to exert influence on the dependent variable.

Dependent variable

The measured behavior in an experiment to determine if it changes as a result of manipulations of the independent variable; in applied behavior analysis, it represents some measure of a socially significant behavior.

External validity

The degree to which a study's findings have generality to other subjects, settings, and/or behaviors.

Independent variable

The variable that is systematically manipulated by the researcher in an experiment to see whether changes in the independent variable produce reliable changes in the dependent variable. In applied behavior analysis, it is usually an environmental event or condition antecedent or consequent to the dependent variable.

Internal validity

The extent to which an experiment shows convincingly that changes in behavior are a function of the independent variable and not the result of uncontrolled or unknown variables.

Multi-element design

An experimental design in which two or more conditions (one of which may be a no-treatment control condition) are presented in rapidly

### Parametric analysis

Differential use a form of experimental reasoning called baseline logic to demonstrate the effects of the independent variable on the behavior of individual subjects. Also called single-subject, within-subject, and intra-subject designs. alternating succession (e.g., on alternating sessions or days) independent of the level of responding; differences in responding between or among conditions are attributed to the effects of the conditions.

### Multiple baseline design

An experimental design that begins with the concurrent measurement of two or more behaviors in a baseline condition, followed by the application of the treatment variable to one of the behaviors while baseline conditions remain in effect for the other behavior(s). After maximum change has been noted in the first behavior, the treatment variable is applied in sequential fashion to each of the other behaviors in the design. Experimental control is demonstrated if each behavior shows similar changes when, and only when, the treatment variable is introduced.

### Prediction

A statement of the anticipated outcome of a presently unknown or future measurement; one of three components of the experimental reasoning, or baseline logic, used in single-subject research designs

### Replication

(A) Repeating conditions within an experiment to determine the reliability of effects and increase internal validity. (b) Repeating whole experiments to determine the generality of findings of previous experiments to other subjects, settings, and/or behaviors.

### Reversal design effects of Verification

One of three components of the experimental reasoning, or baseline logic, used in single-subject research designs; accomplished by demonstrating that the prior level of baseline responding would have remained unchanged, had the independent variable not been introduced. Verifying the accuracy of the original prediction reduces the probability that some uncontrolled (confounding) variable was responsible for the observed change in behavior.

researcher attempts to verify the effect of the independent variable by “reversing” responding to a level obtained in a previous condition; encompasses experimental designs in which the independent variable is withdrawn (A-B-A-B) or reversed in its focus (e.g., DRI/DRA).

### Multiple probe design

A variation of the multiple baseline design that features intermittent measures, or probes, during baseline. It is used to evaluate the effects of instruction on skill sequences in which it is unlikely that the subject can improve performance on later steps in the sequence before learning prior steps.

Quiz on section D

**1. What is the primary focus of single-case experimental design (SCED)?**

- a) Groups of participants
- b) Individual participants
- c) Large populations
- d) Statistical averages

**2. In SCED, what is the term for the period before the intervention is applied?**

- a) Treatment phase
- b) Intervention phase
- c) Baseline phase
- d) Follow-up phase

**3. In a reversal design (ABAB), what does the "A" stand for?**

- a) Assessment
- b) Application
- c) Alternating
- d) Baseline

**4. Which type of design introduces the intervention at different times across multiple behaviors?**

- a) Reversal design
- b) Multiple baseline design
- c) Changing-criterion design
- d) Multi-element design

**5. What is the primary use of component analysis?**

- a) To compare multiple behaviors
- b) To identify effects of individual components of an intervention
- c) To withdraw treatments
- d) To establish group averages

**6. In a changing-criterion design, what is manipulated to assess the participant's performance?**

- a) The number of sessions
- b) The frequency of measuring behaviors
- c) The performance criteria
- d) The type of reinforcement

**7. Which design allows researchers to alternate between two or more conditions?**

- a) Multiple baseline design
- b) Parametric design
- c) Multielement design
- d) Reversal design

**8. In visual analysis, what is primarily used to display data?**

- a) Tables
- b) Graphs
- c) Narratives
- d) Charts

**9. What are "probes" in the context of a multiple probe design?**

- a) Constant monitoring
- b) Infrequent measurements
- c) Control variables
- d) Interventions within the design

**10. Which of the following is NOT a feature of single-case experimental design?**

- a) Individual variability
- b) Random assignment
- c) Repeated measures
- d) Direct observation

**11. What is the purpose of using a reversal phase in an ABAB design?**

- a) To collect additional data
- b) To establish generality
- c) To demonstrate the effectiveness of the intervention
- d) To withdraw the treatment

**12. A major strength of SCED is its ability to assess:**

- a) The impact on whole groups
- b) Individual differences in behavior
- c) The long-term effects of medication
- d) Aggregate scores

**13. In multiple baseline design, how are baselines chosen?**

- a) Randomly
- b) Sequentially across behaviors or participants
- c) Based on participant preference
- d) Before establishing interventions

**14. Which type of design is useful for incrementally modifying an established behavior?**

- a) Multielement design
- b) Reversal design
- c) Changing-criterion design
- d) Component analysis

**15. When analyzing data, an increase in the level of behavior in the intervention phase indicates:**

- a) No effect
- b) A negative relationship
- c) A positive treatment effect
- d) Random variability

**16. In a single-subject design, what is ethical consideration primarily focused on?**

- a) Statistical significance
- b) Participant's right to withdraw

- c) Generalizability of results
- d) Larger sample sizes

**17. What is a potential limitation of single-case experimental design?**

- a) Immediate implementation
- b) Individual control
- c) Limited generalizability
- d) Intensive data collection

**18. What is the first step in conducting a single-case experimental design?**

- a) Implement the intervention
- b) Collect data during the intervention
- c) Establish baseline data
- d) Analyze the results

**19. In which scenario would you most likely choose to use a multiple baseline design?**

- a) When rapid intervention is needed for all behaviors
- b) When a behavior is inaccessible for continuous measurement
- c) When comparing two different interventions
- d) When the intervention requires frequent alterations

**20. How does parametric analysis differ from component analysis?**

- a) Parametric analysis examines components; component analysis changes parameters
- b) Parametric analysis manipulates one variable at a time; component analysis assesses specific intervention parts
- c) Component analysis has fewer intervention phases than parametric analysis
- d) Parametric analysis compares two interventions directly; component analysis looks at one

**ASSIGNMENT**

Applied Supervision Assignment Plan, revised to include one required video assignment per section of the BACB 6th Edition Task List. These video tasks are designed to demonstrate applied competence and support mastery through direct modeling or verbal explanation.

## **Section D: Experimental Design**

### 1. Reversal Design Plan

Create a hypothetical reversal design for a specific client behavior.

### 2. Changing Criterion Design with Task Analysis

Develop a teaching program using changing criterion steps.

### 3. Alternating Treatments Data Interpretation

Analyze graphed alternating treatments data to determine best intervention.

### 4. Multiple Baseline Design Plan

Create a plan showing baseline, intervention, and maintenance phases.

Video Assignment:

“Explaining Experimental Designs” – Create a whiteboard-style or screen-recorded video where you explain one experimental design (your choice), including phases, graph examples, and its advantages.

## **Section D**

### **Primary Books**

#### **(Foundational Sources)**

1. Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). Applied behavior analysis (3rd ed.). Pearson.

(Chapters 7, 8, and 9 cover all experimental design content including basics of internal validity and SCEDs.)

2. Kazdin, A. E. (2011). Single-case research designs: Methods for clinical and applied settings (2nd ed.). Oxford University Press.

(Deep explanation of experimental designs, internal validity threats, and visual analysis.)

## THE BCBA EXAM STUDY GUIDE

3. Johnston, J. M., & Pennypacker, H. S. (2009). *Strategies and tactics of behavioral research* (3rd ed.). Routledge.

(Covers internal vs external validity, independent vs dependent variables, control tactics.)

### Journal Articles

#### (Key Peer-Reviewed Foundations)

1. Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis*, 1(1), 91–97.  
<https://doi.org/10.1901/jaba.1968.1-91>

(Importance of demonstrating functional relations experimentally.)

2. Sidman, M. (1960). *Tactics of scientific research: Evaluating experimental data in psychology*. Basic Books.

(Foundational explanations of experimental control, internal validity, and functional relations.)

3. Barlow, D. H., Nock, M. K., & Hersen, M. (2008). *Single case experimental designs: Strategies for studying behavior change* (3rd ed.). Allyn & Bacon.

(Details alternating treatment design, multiple baseline, and withdrawal/reversal designs, etc.)

(Technically a book, but widely cited similarly to articles because of its applied focus.)

4. Gast, D. L., & Ledford, J. R. (2018). *Single case research methodology: Applications in special education and behavioral sciences* (3rd ed.). Routledge.

(A strong modern source on variations of SCEDs — great for explaining why researchers choose specific designs.)

### Webpages

**(Reputable, for Supplementary or Basic Study Reference)**

1. Behavior Analyst Certification Board (BACB). (2022). BCBA 6th Edition Task List and Content Outline.

<https://www.bacb.com/bcba-6th-edition-task-list/>

(Outlines official expectations for experimental design knowledge.)

2. Association for Behavior Analysis International (ABAI). (n.d.). What is Behavior Analysis?

<https://www.abainternational.org/about-us/about-behavior-analysis.aspx>

(Mentions the use of scientific experimental designs in behavior analysis.)

3. Cambridge Center for Behavioral Studies. (n.d.). Behavior Analysis: A Brief Overview.

<https://behavior.org/behavior-analysis/>

(Emphasizes the necessity of demonstrating functional relations and experimentation.)

4. University of West Florida (UWF) ABA Program. (n.d.). Single-Case Research Designs.

(Their ABA program often has excellent overviews of reversal designs, multiple baseline, changing criterion — if accessible)

## Section 2 of the Study Manual

### E. Ethical and Professional Issues

E.1. Identify and apply core principles underlying the ethics codes for BACB certificants (e.g., benefit others; treat others with compassion, dignity, and respect; behave with integrity).
E.2. Identify the risks to oneself, others, and the profession as a result of engaging in unethical behavior.
E.3. Develop and maintain competence by engaging in professional development activities (e.g., read literature, seek consultation, establish mentors).
E.4. Identify and comply with requirements for collecting, using, protecting, and disclosing confidential information.
E.5. Identify and comply with requirements for making public statements about professional activities (e.g., social media activity; misrepresentation of professional credentials, behavior analysis, and service outcomes).
E.6. Identify the conditions under which services or supervision should be discontinued and apply steps that should be taken when transitioning clients and supervisees to another professional.
E.7. Identify types of and risks associated with multiple relationships, and how to mitigate those risks when they are unavoidable.
E.8. Identify and apply interpersonal and other skills (e.g., accepting feedback, listening actively, seeking input, collaborating) to establish and maintain professional relationships.
E.9. Engage in cultural humility in service delivery and professional relationships.
E.10. Apply culturally responsive and inclusive service and supervision activities.
E.11. Identify personal biases and how they might interfere with professional activity.
E.12. Identify and apply the legal, regulatory, and practice requirements (e.g., licensure, jurisprudence, funding, certification) relevant to the delivery of behavior analytic services.

**E.1. Identify and apply core principles underlying the ethics codes for BACB certificants (e.g., benefit others; treat others with compassion, dignity, and respect; behave with integrity).**

The Ethics Code for Behavior Analysts (2022) outlines key principles that guide BACB certificants in their professional conduct. These principles are designed to ensure that behavior analysts promote the well-being of their clients, maintain professionalism, and uphold the integrity of the field. Below is an overview of these core principles, along with examples of how a BCBA might encounter and address ethical issues in practice.

**1. Benefit Others**

Behavior analysts are ethically obligated to act in the best interests of their clients by delivering services that result in meaningful and socially significant outcomes. This principle emphasizes client-centered care, effective intervention, and data-driven decision-making.

Example:

A BCBA is designing a behavior intervention plan for a child with autism. The parent insists on focusing on academic skills, but the child exhibits severe self-injurious behavior (SIB) that poses immediate safety concerns. The BCBA explains the importance of prioritizing the reduction of SIB, as addressing it first will benefit the child's overall well-being and ability to engage in learning. By educating the parent and proposing a phased approach, the BCBA ensures the intervention aligns with the client's best interests.

**2. Treat Others with Compassion, Dignity, and Respect**

Behavior analysts must interact with clients, families, and colleagues in a way that demonstrates empathy, understanding, and respect for individual differences, preferences, and cultural backgrounds.

Example:

A BCBA works with a family from a culture that places a high value on group dynamics over individual independence. While the BCBA typically focuses on teaching independent living skills, the family prioritizes skills that contribute to harmonious family functioning. Instead of imposing their own perspective, the BCBA adjusts the treatment plan to honor the family's values while still meeting the client's developmental needs. This approach fosters collaboration and maintains respect for the family's culture.

**3. Behave with Integrity**

Integrity involves being honest, transparent, and accountable in all professional activities. This principle requires BCBAs to avoid conflicts of interest, disclose any potential issues, and take responsibility for their actions.

Example:

A BCBA is asked by a family to provide a formal letter recommending additional services, but the family also requests the BCBA exaggerate the child's needs to secure more funding. The BCBA declines, explaining that doing so would violate ethical guidelines and jeopardize the integrity of the assessment process. Instead, they offer to write an accurate and detailed assessment report to support the family in a way that upholds professional standards.

### Integrating Core Principles into Practice

BCBAs encounter complex situations that require them to balance ethical considerations with practical challenges. To uphold these principles, they should:

- Regularly review the Ethics Code for Behavior Analysts and reflect on how it applies to their practice.
- Seek supervision or consultation when faced with ethically ambiguous situations.
- Engage in ongoing professional development to stay informed about best practices and ethical updates.
- Document their decision-making processes to ensure transparency and accountability.

By adhering to these principles and navigating ethical dilemmas thoughtfully, behavior analysts ensure they provide effective, compassionate, and ethical care that enhances the lives of their clients and supports the integrity of the profession.

### **E.2. Identify the risks to oneself, others, and the profession as a result of engaging in unethical behavior.**

#### Identifying the Risks to Oneself, Others, and the Profession as a Result of Engaging in Unethical Behavior

Unethical behavior in the field of behavior analysis poses significant risks to clients, practitioners, and the reputation of the profession. The Ethics Code for Behavior Analysts (2022) was developed to mitigate these risks by guiding professionals to act with integrity, prioritize the

welfare of clients, and uphold the standards of the field. Understanding these risks is essential to avoiding unethical practices and maintaining the trust of those served.

#### Risks to Oneself

Engaging in unethical behavior can have serious personal consequences for behavior analysts. These consequences may include loss of professional certification, legal penalties, damage to reputation, and emotional stress.

#### Example:

A BCBA falsely documents session notes to appear as if therapy hours were delivered when they were not. This misrepresentation is discovered during an audit, resulting in the BCBA losing their BACB certification and facing legal action for insurance fraud. The personal toll includes financial hardship, loss of credibility, and the inability to continue practicing in the field.

#### Key Risks:

- Revocation of BACB certification or professional licensure.
- Legal action, including fines or criminal charges.
- Damage to professional reputation and career prospects.
- Emotional stress and loss of trust among colleagues or clients.

#### Risks to Others

Unethical behavior can directly harm clients, families, and other stakeholders by undermining their trust, safety, and progress. It can result in ineffective or harmful interventions, unmet needs, and the loss of critical resources.

#### Example:

A BCBA recommends an intervention based on personal bias rather than evidence-based practices, leading to minimal progress for the client. The family, frustrated by the lack of results, withdraws from services, leaving the client without necessary support. This harms the client's developmental progress and erodes the family's trust in behavior analysis.

#### Key Risks:

- Physical or emotional harm to clients.
- Ineffective or inappropriate treatment plans.
- Loss of trust in behavior analysts by clients and families.
- Missed opportunities for client progress and independence.

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### Risks to the Profession

Unethical behavior damages the credibility of the entire field of behavior analysis. Publicized ethical violations can lead to mistrust among the public, reduced funding opportunities, and stricter regulatory oversight.

#### Example:

A widely publicized case of a BCBA misusing aversive procedures without informed consent results in negative media coverage. Advocacy groups call for tighter restrictions on behavior analysts, and stakeholders question the validity of ABA therapy. This undermines the profession's reputation and creates barriers for future practitioners.

#### Key Risks:

- Erosion of public trust in behavior analysis as a discipline.
- Increased scrutiny and regulation, limiting practitioners' flexibility.
- Reduced referrals and funding for behavior analytic services.
- Difficulty recruiting and retaining skilled professionals due to negative perceptions.

### Preventing Unethical Behavior

To minimize these risks, behavior analysts should:

1. Follow the Ethics Code: Adhere to guidelines for professional conduct, including competence, transparency, and respect for clients' rights.
2. Seek Supervision and Consultation: When in doubt about the ethicality of a situation, consult with supervisors or ethics boards to gain clarity and ensure compliance.
3. Prioritize Ongoing Education: Stay informed about ethical practices and updates to the Ethics Code through continuing education.
4. Document and Reflect: Keep thorough records of decision-making processes to ensure accountability and transparency.

By maintaining high ethical standards, behavior analysts protect themselves, their clients, and the integrity of the profession, ensuring that behavior analysis continues to be a trusted and effective discipline.

**E.3. Develop and maintain competence by engaging in unethical practices professional development activities (e.g., read literature, seek consultation, establish mentors).**

Developing and Maintaining Competence in Behavior Analysis

Competence is a cornerstone of ethical behavior in the field of applied behavior analysis (ABA). Behavior analysts are required to deliver services that are grounded in evidence-based practices and informed by the most current research and advancements in the field. To achieve this, behavior analysts must engage in ongoing professional development. However, failing to develop or maintain competence through ethical means—such as cutting corners, misrepresenting qualifications, or disregarding current standards—poses significant risks to clients and the profession. Below is a guide to maintaining competence through ethical professional development practices, as outlined in the Ethics Code for Behavior Analysts (2022).

Ethical Professional Development Practices

1. Read Current Literature

Staying up-to-date with peer-reviewed research and professional publications is critical to maintaining competence. Behavior analysts must be informed of advancements in assessment tools, intervention techniques, and treatment outcomes.

Example of Ethical Practice:

A BCBA regularly reviews journals like Behavior Analysis in Practice or The Journal of Applied Behavior Analysis to learn about emerging evidence-based practices for treating complex behaviors. They apply this knowledge by updating treatment plans to reflect current standards.

Unethical Practice:

Failing to review updated literature and continuing to use outdated or unsupported interventions could result in ineffective treatment and harm to the client.

2. Seek Supervision and Consultation

Consulting with colleagues, mentors, or supervisors allows behavior analysts to gain new perspectives, address skill gaps, and navigate complex clinical scenarios ethically.

Example of Ethical Practice:

A BCBA encounters a client with a rare behavioral presentation outside their current expertise. They consult with a colleague who specializes in this area to ensure the intervention plan is appropriate and effective.

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### Unethical Practice:

Attempting to treat the client independently without seeking consultation, despite lacking expertise, could lead to harm and violate the requirement to provide competent services.

### 3. Establish Mentors and Collaborate with Experts

Mentorship is an invaluable resource for developing new skills and maintaining ethical standards. Experienced mentors can provide guidance, feedback, and support to help behavior analysts grow professionally.

### Example of Ethical Practice:

A newly certified BCBA seeks mentorship from a seasoned professional to improve their skills in parent training and consultation. Through regular meetings, they refine their ability to communicate effectively with families and implement sustainable interventions.

### Unethical Practice:

Relying solely on past experiences without seeking mentorship or feedback could lead to professional stagnation and inadequate client care.

### 4. Attend Continuing Education (CE) Opportunities

The BACB requires certificants to engage in continuing education to maintain certification. Behavior analysts must participate in training sessions, workshops, or conferences that enhance their knowledge and skills.

### Example of Ethical Practice:

A BCBA attends a conference on trauma-informed ABA practices and applies the new knowledge to tailor interventions for clients with a history of trauma.

### Unethical Practice:

Failing to complete the required CE hours or falsely reporting attendance at CE events is a violation of the Ethics Code and undermines the purpose of maintaining competence.

### Risks of Unethical Professional Development Practices

Failing to develop or maintain competence ethically can have significant consequences:

- For Clients: Ineffective or harmful services may result from outdated knowledge or a lack of expertise.
- For the Practitioner: Engaging in unethical practices, such as misrepresenting qualifications or skipping CE requirements, can lead to loss of certification or legal action.

- For the Profession: Unethical behavior diminishes trust in ABA services, harming the field's reputation.

#### Tips for Maintaining Competence Ethically

- Set Professional Goals: Identify areas for growth and seek relevant resources, training, or mentorship to enhance those skills.
- Regularly Evaluate Skills: Reflect on your current competencies and seek feedback from peers or supervisors.
- Engage in Peer Collaboration: Participate in professional networks and forums to share insights and stay informed about emerging trends.
- Adhere to BACB Requirements: Ensure timely completion of all CE requirements and document activities accurately.

By consistently engaging in ethical professional development activities, behavior analysts demonstrate their commitment to competence, integrity, and the highest standards of client care.

#### **E.4. Identify and comply with requirements for collecting, using, protecting, and disclosing confidential information.**

##### Identifying and Complying with Requirements for Collecting, Using, Protecting, and Disclosing Confidential Information

Confidentiality is a fundamental ethical and legal obligation for behavior analysts, as outlined in the Ethics Code for Behavior Analysts (2022). Proper handling of confidential information ensures the protection of clients' rights and fosters trust in professional relationships. Violations of confidentiality can result in harm to clients, legal consequences, and damage to the field of behavior analysis. Below is a guide to ethically collecting, using, protecting, and disclosing confidential information, along with examples of ethical and unethical practices.

##### Collecting Confidential Information

Behavior analysts are required to collect only the information that is necessary for service delivery. Information should be gathered through ethical means, with informed consent from clients or their guardians.

Example of Ethical Practice:

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A BCBA requests consent to collect data on a child's behavior in the home and school settings. The BCBA explains how the information will be used to develop an individualized behavior intervention plan.

Unethical Practice:

A BCBA collects detailed family medical histories without informing the family of how the information will be used, violating the principle of informed consent.

Key Points:

- Obtain informed consent before collecting sensitive information.
- Ensure data collection is directly relevant to the client's treatment goals.

Using Confidential Information

Behavior analysts must use confidential information solely for purposes related to assessment, treatment, and service delivery. They should avoid using client information for personal or non-professional purposes.

Example of Ethical Practice:

A BCBA uses assessment data to develop a treatment plan and shares the information with the treatment team during a private meeting.

Unethical Practice:

A BCBA uses a client's case as an example during a conference presentation without de-identifying the information or obtaining consent, exposing the client to a potential breach of confidentiality.

Key Points:

- Use client information only for professional purposes.
- De-identify data whenever possible for presentations, publications, or training materials.

Protecting Confidential Information

Behavior analysts must take reasonable precautions to safeguard confidential information from unauthorized access, theft, or misuse. This includes both physical and electronic records.

Example of Ethical Practice:

A BCBA stores client files in a locked cabinet and ensures that electronic records are encrypted and password-protected. They also train staff members on confidentiality protocols.

Unethical Practice:

A BCBA leaves assessment forms with identifying client information in a public area, where unauthorized individuals can view them.

Key Points:

- Use secure storage methods for physical and electronic records.
- Limit access to confidential information to authorized personnel.
- Train staff on confidentiality procedures and regularly review protocols.

Disclosing Confidential Information

Disclosure of confidential information is permissible only under specific conditions, such as obtaining prior consent, legal requirements, or when it is necessary to protect the client or others from harm.

Example of Ethical Practice:

A BCBA receives a subpoena to release a client's records. Before complying, they consult with a legal professional to ensure the disclosure meets legal and ethical requirements.

Unethical Practice:

A BCBA shares a client's information with a teacher without obtaining the client's guardian's written consent, violating confidentiality rules.

Key Points:

- Obtain written consent before disclosing information, except when required by law.
- Consult with legal or ethical experts when handling subpoenas or court orders.
- Document any disclosures of confidential information, including the justification for the disclosure.

Risks of Failing to Comply with Confidentiality Requirements

Failure to handle confidential information appropriately can lead to:

- Harm to Clients: Breaches of confidentiality can damage trust, relationships, and the client's privacy.
- Legal Consequences: Violations may result in lawsuits, fines, or loss of licensure.

- Professional Consequences: Damage to the BCBA’s reputation and the integrity of the field.

#### Tips for Complying with Confidentiality Requirements

- Understand Legal and Ethical Guidelines: Familiarize yourself with the relevant laws (e.g., HIPAA, FERPA) and the BACB Ethics Code.
- Document Everything: Maintain records of consents, disclosures, and steps taken to protect information.
- Train Your Team: Ensure all team members understand and follow confidentiality protocols.
- Seek Guidance: Consult with supervisors, legal professionals, or ethics boards when unsure about confidentiality issues.

By adhering to these guidelines, behavior analysts ensure they are protecting their clients’ rights, fulfilling their ethical obligations, and upholding the standards of the profession.

### **E.5. Identify and comply with requirements for making public statements about professional activities (e.g., social media activity; misrepresentation of professional credentials, behavior analysis, and service outcomes).**

#### Professional Ethics in Public Statements and Social Media for Behavior Analysts

##### Introduction

As professionals in Applied Behavior Analysis (ABA), behavior analysts must adhere to ethical guidelines when making public statements about their work, credentials, and service outcomes. Misrepresentation—whether intentional or unintentional—can have serious ethical and legal consequences, especially in social media and public communications. This training will cover the key ethical requirements outlined in the BACB Ethics Code (2022) and best practices for ensuring professional integrity.

##### 1. Ethical Guidelines for Public Statements

Behavior analysts must ensure that all public statements, including those made on social media, websites, promotional materials, and professional presentations, are accurate, ethical, and compliant with the Behavior Analyst Certification Board (BACB) standards.

##### Key Ethical Code Standards:

- 5.01: Protecting the Profession’s Integrity

- Avoid misleading, exaggerated, or false claims about behavior analysis, professional experience, or service outcomes.
- 5.02: Public Statements
- Ensure statements about ABA services are truthful, objective, and based on empirical evidence.
- Clearly differentiate opinions from evidence-based claims.
- 5.04: Media Presentations & Social Media
- Maintain professional boundaries and avoid sharing confidential client information.
- Do not provide ABA services or advice through social media.

## 2. Misrepresentation of Professional Credentials

### What Is Considered Misrepresentation?

- Claiming credentials you do not possess (e.g., calling yourself a BCBA when you are an RBT).
- Using incorrect or outdated BACB certifications.
- Implying expertise outside your competency area (e.g., stating you are an expert in autism treatment without the proper training).
- Falsifying educational or training experiences.

### Best Practices for Compliance:

- ✓ Always use the exact credential designation (e.g., BCBA®, BCaBA®, RBT®).
- ✓ If in training, clearly indicate your supervision status (e.g., “BCBA Candidate under supervision”).
- ✓ Regularly update professional profiles (e.g., LinkedIn, company websites) to ensure they reflect current certifications.

## 3. Ethical Use of Social Media in ABA

### Common Ethical Violations on Social Media:

- Sharing client information (even if names are omitted).
- Discussing specific cases or providing direct behavior-analytic advice online.
- Making unverified claims about ABA effectiveness or service outcomes.
- Engaging in unprofessional conduct, including responding to criticism in an inappropriate manner.

Best Practices for Social Media Conduct:

- ✓ Maintain a clear separation between personal and professional accounts.
- ✓ Assume everything posted is public, even in closed groups.
- ✓ Do not engage in direct ABA consultation or treatment via social media.
- ✓ Report misrepresentation or ethical violations to the appropriate bodies (e.g., BACB, employer).

4. Avoiding False or Misleading Statements about ABA and Service Outcomes

What Constitutes a False or Misleading Statement?

- Stating that ABA guarantees a specific outcome (e.g., “ABA will cure autism”).
- Promoting unsupported interventions as part of ABA (e.g., combining ABA with non-evidence-based treatments).
- Making exaggerated or absolute claims about effectiveness (e.g., “100% success rate”).

Best Practices:

- ✓ Use data-driven statements (e.g., “Research supports the effectiveness of ABA for increasing communication skills”).
- ✓ Clearly differentiate research findings from personal opinion.
- ✓ Ensure all promotional materials comply with ethical marketing practices.

5. Reporting and Addressing Ethical Violations

If you observe or become aware of misrepresentation, unethical public statements, or improper social media use:

1. Address the issue directly if appropriate (e.g., inform a colleague of a potential ethical breach).
2. Report to a supervisor if within an agency.
3. File a formal complaint with the BACB if necessary.

Conclusion

**E.6. Identify the conditions under which services or supervision**

## Identifying and Complying with Requirements for Making Public Statements about Professional Activities

Public statements made by behavior analysts—including those shared on social media, in marketing materials, or during public speaking—must adhere to the ethical standards outlined in the Ethics Code for Behavior Analysts (2022). These statements must be truthful, accurate, and respectful of the profession. Misrepresentation of credentials, services, or outcomes not only violates ethical guidelines but also risks harming clients, eroding public trust, and damaging the integrity of the field. Below is a guide to ethically navigating public statements and examples of ethical and unethical practices.

### Ethical Requirements for Public Statements

#### 1. Accurately Represent Professional Credentials

Behavior analysts must truthfully represent their qualifications, certifications, and areas of expertise in all public statements, including resumes, websites, and social media profiles.

##### Example of Ethical Practice:

A BCBA creates a LinkedIn profile that lists their BACB certification, relevant academic degrees, and areas of specialization. They ensure that all information is accurate and up to date.

##### Unethical Practice:

A BCBA claims expertise in an area they lack experience in (e.g., forensic behavior analysis) to attract more clients, misleading stakeholders and potentially providing inadequate services.

##### Key Points:

- Avoid exaggerating or misrepresenting credentials or expertise.
- Clearly distinguish between certified and non-certified team members in all communications.

#### 2. Make Truthful Claims about Services and Outcomes

Public statements about behavior-analytic services must be based on evidence and must not guarantee specific results. Promising outcomes or making unsupported claims violates ethical standards.

##### Example of Ethical Practice:

A BCBA advertises services on their website, stating, “Our interventions are based on evidence-based practices designed to promote socially significant behavior change.”

##### Unethical Practice:

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A BCBA claims, “We guarantee that your child will be fully independent within six months,” implying certainty of results that cannot be ethically or realistically promised.

Key Points:

- Avoid making guarantees about treatment outcomes.
- Use evidence-based language when discussing services.

### 3. Be Mindful of Social Media Activity

Behavior analysts must be cautious about their social media activity to avoid violating confidentiality, making unprofessional comments, or misrepresenting the field. Social media platforms are considered public spaces, and all posts should reflect ethical standards.

Example of Ethical Practice:

A BCBA shares a de-identified, evidence-based resource on behavior management strategies on their professional social media account.

Unethical Practice:

A BCBA posts a video of a therapy session without obtaining consent from the client or their family, breaching confidentiality and professionalism.

Key Points:

- Avoid sharing identifiable client information on any platform.
- Separate personal and professional social media accounts to maintain professionalism.
- Ensure all public posts reflect the values and standards of behavior analysis.

### 4. Avoid Misrepresentation of Behavior Analysis

Behavior analysts must avoid exaggerating the scope of ABA, misrepresenting its applications, or presenting it as a cure-all. Public statements should reflect the science accurately and avoid sensationalism.

Example of Ethical Practice:

A BCBA explains in a webinar that ABA is an evidence-based approach to improving socially significant behaviors and emphasizes its individualized nature.

Unethical Practice:

A BCBA states that ABA is the only effective treatment for autism, dismissing the value of other approaches and misrepresenting the field as universally applicable.

Key Points:

- Represent ABA as a science-based discipline without overstating its scope.
- Provide balanced and factual information about its applications and limitations.

Risks of Making Unethical Public Statements

Failure to comply with ethical guidelines for public statements can result in:

- **Harm to Clients:** Misleading claims may result in false hope or unmet expectations for clients and families.
- **Professional Consequences:** Misrepresentation can lead to BACB sanctions, loss of certification, or legal consequences.
- **Damage to the Profession:** Unethical statements diminish public trust and undermine the credibility of the field.

Tips for Ethical Public Statements

- **Verify Content:** Ensure all public statements are accurate, evidence-based, and consistent with the BACB Ethics Code.
- **Avoid Guarantees:** Never promise specific outcomes or overstate the effectiveness of behavior-analytic services.
- **Protect Confidentiality:** Never share identifiable client information without explicit consent.
- **Maintain Professionalism:** Be mindful of the tone, content, and potential impact of all statements, particularly on social media.
- **Seek Peer Review:** When in doubt, consult with colleagues, mentors, or supervisors before making public statements.

By adhering to these ethical standards, behavior analysts ensure their public communications promote trust, reflect the integrity of the field, and safeguard the welfare of clients and the public.

**E.6. Identify conditions in which services or supervision should be discontinued and apply steps that should be taken when transitioning clients and supervisees to another professional.**

## Identifying Conditions for Discontinuing Services or Supervision and Transitioning Clients and Supervisees to another Professional

In behavior analysis, ethical decision-making includes recognizing when it is appropriate to discontinue services or supervision. Behavior analysts must prioritize the welfare of clients and supervisees by ensuring transitions are handled professionally, ethically, and in alignment with the Ethics Code for Behavior Analysts (2022). Services or supervision should only be discontinued under specific conditions, and proper steps must be taken to minimize disruption and ensure continuity of care or support.

### Conditions for Discontinuing Services or Supervision

#### 1. Achievement of Treatment Goals

Services should be discontinued when clients have met their treatment goals and no longer require behavior-analytic services.

##### Example:

A client demonstrates consistent mastery of all skill acquisition goals, and problem behaviors have significantly reduced to socially acceptable levels. The BCBA determines that services are no longer necessary and begins the discharge process.

#### 2. Client Decision to Terminate Services

Clients or their guardians may choose to discontinue services at any time, regardless of the BCBA's recommendations.

##### Example:

A family informs the BCBA that they have decided to discontinue services due to financial constraints. The BCBA respects their decision and assists with a smooth transition.

#### 3. Inability to Provide Effective Services

Services may need to be discontinued if the behavior analyst lacks the necessary expertise or resources to address the client's needs effectively.

##### Example:

A BCBA realizes that a client's complex medical condition requires a multidisciplinary approach beyond their scope of practice. The BCBA coordinates with the family to transfer services to a professional with the necessary expertise.

#### 4. Violation of Ethical or Professional Standards

Services or supervision should be discontinued if continuing the relationship would require the BCBA to violate ethical or professional standards.

Example:

A supervisee asks the BCBA to approve inaccurate documentation of supervision hours. The BCBA explains why this violates ethical guidelines, discontinues supervision, and reports the incident to the BACB if necessary.

#### 5. Non-Adherence to Treatment Recommendations

If a client or guardian consistently fails to adhere to treatment recommendations, and this noncompliance undermines the effectiveness of services, discontinuation may be appropriate.

Example:

A family repeatedly cancels sessions without notice, making it impossible for the BCBA to implement a consistent treatment plan. After attempts to address the issue, the BCBA decides to discontinue services and assists with a referral to another provider.

#### Steps for Transitioning Clients or Supervisees to another Professional

When discontinuing services or supervision, behavior analysts must take steps to ensure a smooth transition to another qualified professional.

##### 1. Provide Advance Notice

Behavior analysts should provide sufficient notice to allow clients or supervisees time to prepare for the transition.

Example:

A BCBA informs a client's family two months in advance that they are relocating and will no longer be able to provide services.

##### 2. Facilitate Referrals

Behavior analysts should assist in identifying and connecting clients or supervisees with another qualified professional who can continue services or supervision.

Example:

The BCBA provides the family with a list of local providers and offers to share relevant treatment data with the new provider upon receiving consent.

##### 3. Ensure Continuity of Care

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During the transition, behavior analysts should take steps to minimize disruptions and ensure the client's or supervisee's needs are addressed.

Example:

A BCBA collaborates with the incoming provider to share treatment plans, progress data, and relevant assessment results, ensuring a seamless transition of services.

### 4. Document the Transition

Behavior analysts must document all steps taken to transition the client or supervisee, including communications, referrals, and consent forms.

Example:

The BCBA maintains records of emails sent to the family, referrals provided, and consent obtained to share client information with the new provider.

### 5. Maintain Professionalism

Behavior analysts should avoid discussing personal grievances or negative opinions about the transition and maintain a professional demeanor throughout the process.

Example:

Even if a BCBA disagrees with a family's decision to discontinue services, they respectfully honor their decision and focus on facilitating a smooth handoff to another provider.

### Risks of Failing to Transition Clients or Supervisees Properly

Improper handling of service or supervision discontinuation can result in:

- **Harm to Clients or Supervisees:** Disruptions in care or guidance may hinder progress or lead to regression.
- **Ethical Violations:** Failing to follow proper procedures may breach ethical guidelines and result in sanctions or loss of certification.
- **Damage to Professional Reputation:** Mishandling transitions can harm the trust of clients, families, and colleagues.

### Tips for Ethical Discontinuation and Transition

- **Communicate Early:** Notify clients or supervisees as soon as the decision to discontinue services is made.
- **Collaborate During the Transition:** Work with incoming professionals to ensure continuity of care or supervision.

- Document Thoroughly: Keep detailed records of all actions taken during the transition process.
- Prioritize the Client's or Supervisee's needs: Focus on minimizing disruption and ensuring their best interests are served.

By adhering to these ethical guidelines, behavior analysts demonstrate their commitment to professionalism, client welfare, and the integrity of the field.

### **E.7. Identify types of and risks associated with multiple relationships, and how to mitigate those risks when they are unavoidable.**

#### Identifying Types of and Risks Associated with Multiple Relationships, and Strategies to Mitigate Risks

In the field of applied behavior analysis (ABA), multiple relationships occur when a behavior analyst engages in a professional role with a client, supervisee, or stakeholder and simultaneously engages in another role (e.g., personal, financial, or familial) with the same individual. These relationships, if not managed ethically, can compromise objectivity, impair professional judgment, and harm clients or supervisees. The Ethics Code for Behavior Analysts (2022) strictly outlines the need to avoid or mitigate the risks associated with multiple relationships to protect clients, uphold professional standards, and maintain trust.

#### Types of Multiple Relationships

##### 1. Personal Relationships

Occurs when a behavior analyst has a friendship, familial, or romantic relationship with a client, supervisee, or stakeholder.

Example: A BCBA providing therapy to the child of a close family friend.

##### 2. Financial Relationships

Involves financial transactions beyond the professional relationship, such as accepting gifts or engaging in business dealings.

Example: A BCBA agrees to provide discounted services to a client in exchange for free childcare services.

##### 3. Dual Professional Roles

Occurs when a behavior analyst holds two professional roles with the same individual.

Example: A BCBA acts as both a clinical supervisor and a personal therapist for the same client.

#### 4. Social Media Relationships

Involves connecting with clients, supervisees, or their families on social media platforms, which may blur the lines between professional and personal boundaries.

Example: A BCBA follows a client's parents on social media and frequently interacts with their posts.

#### Risks Associated with Multiple Relationships

##### 1. Impaired Objectivity

A multiple relationship can create bias in decision-making, leading to compromised treatment or supervision quality.

Example: A BCBA may hesitate to recommend necessary but expensive services to a close friend to avoid financial strain on the relationship.

##### 2. Conflicts of Interest

Multiple relationships can create competing interests that undermine the behavior analyst's ability to prioritize the client's best interests.

Example: A BCBA supervising a family member may prioritize their relationship over holding them accountable for ethical lapses.

##### 3. Harm to Clients or Supervisees

Multiple relationships may unintentionally exploit or harm vulnerable individuals.

Example: A supervisee may feel coerced to perform non-job-related favors for a BCBA with whom they have a personal relationship.

##### 4. Erosion of Professional Boundaries

Blurred boundaries may lead to inappropriate conduct, reduced professionalism, or a perception of favoritism.

Example: Socializing with a client's family outside of therapy may make it difficult to maintain a professional therapeutic relationship.

##### 5. Legal and Ethical Violations

Failing to manage multiple relationships can result in breaches of confidentiality, ethical violations, and legal consequences.

Example: A BCBA unintentionally shares private client information while engaging in a casual conversation with a family friend.

### Mitigating Risks When Multiple Relationships Are Unavoidable

While avoiding multiple relationships is ideal, there are situations where they may be unavoidable. In such cases, behavior analysts

## **E.8. Identify and apply interpersonal and other skills (e.g., accepting feedback, listening actively, seeking input, collaborating) to establish and maintain professional relationships.**

### Identifying and Applying Interpersonal Skills to Establish and Maintain Professional Relationships

Establishing and maintaining professional relationships is a cornerstone of ethical behavior in applied behavior analysis (ABA). Behavior analysts work with diverse individuals, including clients, families, supervisees, and interdisciplinary teams, requiring a strong foundation in interpersonal skills. By applying skills such as active listening, accepting feedback, seeking input, and collaborating effectively, behavior analysts can foster trust, communication, and positive outcomes while adhering to the Ethics Code for Behavior Analysts (2022).

#### Core Interpersonal Skills for Professional Relationships

##### 1. Active Listening

Active listening involves fully focusing on the speaker, understanding their message, and responding thoughtfully. This skill ensures that behavior analysts accurately interpret the needs and concerns of clients, families, and colleagues.

Example: During a parent meeting, a BCBA listens attentively to a caregiver's concerns about their child's treatment progress, paraphrasing their statements to confirm understanding and validate their feelings.

#### Key Strategies:

- Maintain eye contact and avoid distractions.
- Use verbal and non-verbal cues (e.g., nodding, "I understand") to demonstrate engagement.
- Summarize and clarify to ensure mutual understanding.

##### 2. Accepting Feedback

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Receiving feedback with an open mind is critical for professional growth and maintaining productive relationships. Behavior analysts should view feedback as an opportunity to improve their practice and demonstrate humility.

Example: A supervisor provides a BCBA with constructive criticism regarding data collection practices. The BCBA thanks the supervisor, reflects on the feedback, and adjusts their approach accordingly.

Key Strategies:

- Avoid defensiveness and remain open to different perspectives.
- Ask clarifying questions to fully understand the feedback.
- Implement suggested changes and follow up to show progress.

### 3. Seeking Input from Others

Inviting input from clients, families, and team members promotes collaboration and ensures that treatment decisions reflect the needs and preferences of all stakeholders.

Example: A BCBA includes a teacher and parent in a behavior intervention planning meeting, seeking their insights to create a plan that works across home and school environments.

Key Strategies:

- Encourage stakeholders to share their expertise and perspectives.
- Use open-ended questions to gather diverse viewpoints.
- Integrate feedback into decision-making processes.

### 4. Collaborating Effectively

Collaboration involves working cooperatively with others to achieve shared goals. In ABA, this often means teaming up with professionals from other disciplines, such as speech therapists, occupational therapists, or educators, to provide comprehensive care.

Example: A BCBA partners with a speech-language pathologist to create a unified intervention plan for a client, ensuring consistency across therapy sessions.

Key Strategies:

- Clearly define roles and responsibilities.
- Respect the expertise and contributions of other professionals.
- Communicate regularly and share relevant data to maintain alignment.

## Importance of Professional Relationships in ABA

### 1. Building Trust

Trust is essential for effective collaboration. Clients and colleagues are more likely to engage meaningfully when they feel respected and heard.

Example: A BCBA gains a family's trust by consistently updating them on their child's progress and incorporating their feedback into treatment plans.

### 2. Promoting Ethical Practice

Interpersonal skills help behavior analysts uphold ethical standards, such as maintaining transparency, fostering dignity, and prioritizing the client's welfare.

Example: A BCBA uses empathetic communication to explain treatment decisions, ensuring the client's family understands and consents to the plan.

### 3. Improving Outcomes

Effective collaboration and communication lead to better outcomes for clients by ensuring treatment plans are individualized, comprehensive, and culturally sensitive.

Example: A BCBA collaborates with a family to incorporate culturally relevant reinforcers into a behavior plan, increasing its effectiveness.

## Challenges and How to Address Them

### 1. Managing Conflicts

Conflicts may arise when team members or families have differing opinions about treatment approaches.

Example: A parent disagrees with a BCBA's recommendation to reduce a child's access to a preferred item as part of an intervention plan.

Solution: The BCBA actively listens to the parent's concerns, explains the rationale behind the recommendation, and works collaboratively to identify a compromise.

### 2. Overcoming Miscommunication

Miscommunication can result in misunderstandings or strained relationships.

Example: A teacher misunderstands a BCBA's instructions for implementing a token economy in the classroom, leading to inconsistent application.

Solution: The BCBA schedules a follow-up meeting to clarify the plan, provides a written summary, and offers additional training.

Tips for Developing Interpersonal Skills

1. Engage in Professional Development

Attend workshops, read literature, and seek mentorship to improve communication and collaboration skills.

2. Practice Empathy

Consider the perspectives and emotions of others to build stronger connections.

3. Solicit Feedback Regularly

Ask colleagues, clients, and families for feedback on your interpersonal skills and adjust accordingly.

4. Role-Play Scenarios

Practice challenging conversations with peers or supervisors to build confidence and competence.

By cultivating and applying interpersonal skills such as active listening, accepting feedback, seeking input, and collaborating effectively, behavior analysts can establish and maintain ethical, professional relationships that promote trust, respect, and positive outcomes. These skills not only enhance the quality of services provided but also contribute to the integrity and reputation of the field of ABA.

**E.9. Engage in cultural humility in service delivery and professional relationships.**

Cultural humility is an ongoing, reflective process of examining one's own cultural biases, values, and assumptions, and approaching individuals and communities with openness, respect, and a willingness to learn. Unlike cultural competence—which implies a static level of knowledge—cultural humility acknowledges that one can never be fully competent in another person's culture and must therefore engage in lifelong learning and self-awareness.

In behavior-analytic practice, cultural humility requires BCBA's to understand how cultural factors influence behavior, treatment preferences, family values, and communication styles. Practitioners must continuously adapt their approach to ensure services are relevant, respectful, and effective across diverse populations.

Why Cultural Humility Matters in ABA

Promotes effective, individualized intervention planning.

Increases client trust, engagement, and satisfaction.

Reduces risk of ethical violations related to bias or misunderstanding.

Supports collaboration with caregivers, stakeholders, and interdisciplinary teams from diverse backgrounds.

### Key Strategies for Practicing Cultural Humility

#### 1. Self-Reflection and Bias Awareness

Engage in ongoing self-assessment to identify personal cultural values, biases, and how they may influence professional interactions and decision-making.

Ask: How might my background influence how I interpret this behavior or recommend this intervention?

Avoid assumptions based on race, language, religion, socioeconomic status, gender identity, or disability.

✓ Example: A BCBA recognizes that their preference for eye contact in communication may not align with a family's cultural norms, and refrains from interpreting lack of eye contact as noncompliance.

#### 2. Open and Respectful Communication

Create space for clients and families to express their values, concerns, and expectations. Use active listening to demonstrate respect and validation.

Avoid using technical jargon without explaining terms in understandable language.

Ask culturally informed questions:

“Are there any customs, beliefs, or routines in your home that are important to consider when creating this plan?”

“How would your family prefer we approach discipline or reinforcement strategies?”

✓ Example: A practitioner adjusts a toilet training protocol to respect a family's religious practices around modesty.

#### 3. Individualized and Collaborative Treatment Planning

Design goals and interventions that are not only behaviorally sound, but culturally appropriate and feasible for the client's context.

Consider routines, family structures, language, and resources when proposing strategies.

Ensure that materials, visuals, reinforcers, and settings are respectful and inclusive.

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✓ Example: A BCBA learns key phrases in a client's home language to support communication training and includes culturally relevant reinforcers in the program.

### 4. Continuing Education and Community Engagement

Stay informed about cultural practices and the evolving understanding of diversity, equity, and inclusion.

Attend trainings, workshops, and conferences focused on cross-cultural practice in human services.

Seek mentorship or supervision from culturally diverse professionals.

Read literature from a wide range of perspectives, including those with lived experiences.

✓ Example: A supervisor encourages their team to review ethical scenarios involving cultural considerations and reflect on their responses in team meetings.

### 5. Acknowledge Power Dynamics

Recognize the inherent power differential between professionals and clients, and actively work to reduce this imbalance.

Include clients and families in goal-setting and decision-making processes.

Validate client and caregiver expertise regarding their own lives and experiences.

Be willing to adapt or revise your recommendations based on collaborative input.

✓ Example: A BCBA proposes two intervention options and discusses the pros and cons with the family, empowering them to choose the best fit for their lifestyle.

### Ethical and Professional Obligations

According to the BACB Ethics Code (2022), behavior analysts are ethically required to act in the best interest of clients, maintain cultural awareness, and promote dignity and respect in all interactions (see Sections 1.07, 2.06, and 4.07).

Failure to practice cultural humility can result in:

Miscommunication and reduced treatment effectiveness

Harm to client dignity and autonomy

Violations of ethical code or legal standards

## **E.10. Apply culturally responsive and inclusive service and supervision activities.**

### Applying Culturally Responsive and Inclusive Service and Supervision Activities

Culturally responsive and inclusive practices are essential for ethical and effective behavior analysis. Behavior analysts must tailor their interventions, consultations, and supervisory approaches to honor and address the diverse cultural, linguistic, and experiential backgrounds of their clients and supervisees. The Ethics Code for Behavior Analysts (2022) emphasizes the importance of respecting individual differences, promoting equitable access to services, and fostering an inclusive environment. By integrating cultural considerations into every step of service delivery and supervision, behavior analysts can support meaningful outcomes and empower all participants.

#### 1. Culturally Responsive Service Delivery

##### 1.1 Assessing Cultural and Linguistic Variables

- **Gather Cultural Information:** During intake, learn about the client's language, values, traditions, and family structure.
- **Use Culturally Adapted Tools:** When possible, select or modify assessment tools to be culturally and linguistically appropriate.
- **Seek Cultural Consultation:** If unfamiliar with a client's cultural background, consult with colleagues, cultural liaisons, or community resources to enhance your understanding.

Example: A BCBA working with a bilingual family modifies skill assessments to include prompts in both English and the family's home language, ensuring accurate data collection.

##### 1.2 Individualizing Interventions

- **Respect Cultural Practices:** Incorporate the client's cultural or religious customs when designing behavior interventions (e.g., dietary preferences, holiday observances, community involvement).
- **Use Contextually Relevant Reinforcers:** Select reinforcers that are meaningful within the client's cultural context (e.g., culturally significant foods or activities).
- **Collaborate with Stakeholders:** Involve family members or other key individuals who can provide input on cultural traditions, routines, and expectations.

Example: A BCBA develops a social skills program that aligns with a client's cultural emphasis on familial unity, incorporating group-oriented activities that reflect the family's values.

## THE BCBA EXAM STUDY GUIDE

### 1.3 Engaging Families and Communities

- **Communication Strategies:** Adapt communication styles to respect cultural norms (e.g., formality, directness, and levels of personal disclosure).
- **Family-Centered Goals:** Collaborate with families to determine socially significant goals that reflect their cultural priorities.
- **Respecting Beliefs and Customs:** Show openness and willingness to learn from clients about culturally specific practices that might influence treatment.

Example: A BCBA invites parents from a collectivist culture to discuss how communal decision-making affects daily routines, then integrates those insights into the intervention plan.

## 2. Inclusive Supervision Practices

### 2.1 Creating an Inclusive Environment

- **Value Diversity:** Recognize and celebrate the unique backgrounds, perspectives, and experiences of supervisees.
- **Encourage Open Dialogue:** Foster an atmosphere where supervisees feel comfortable discussing cultural concerns or differences.
- **Address Bias and Power Dynamics:** Acknowledge potential biases or power imbalances in supervisory relationships, taking steps to mitigate their impact.

Example: A BCBA supervisor establishes a regular supervisory check-in dedicated to discussing cultural considerations and professional growth areas related to diversity and inclusion.

### 2.2 Adapting Supervisory Techniques

- **Different Learning Styles:** Provide multiple modalities for supervisees to learn (e.g., reading materials, role-play, hands-on activities) to accommodate diverse learning preferences.
- **Personalized Feedback:** Give feedback that is culturally sensitive, acknowledging personal communication styles and background.
- **Goal-Setting with Cultural Awareness:** Work with supervisees to set individualized goals that consider their cultural context and career aspirations.

Example: A BCBA supervisor uses visual aids and hands-on activities to train a supervisee whose primary language is not English, ensuring that language barriers do not hinder skill development.

### 2.3 Mentoring and Professional Development

- **Encourage Ongoing Education:** Provide resources and opportunities for supervisees to develop cultural competence (e.g., workshops, conferences, reading groups).
- **Model Culturally Responsive Behavior:** Demonstrate respect, open-mindedness, and self-reflection in all professional interactions, serving as a role model for supervisees.
- **Celebrate Inclusivity:** Recognize and reward efforts to incorporate cultural responsiveness in assessment, intervention, and collaboration.

Example: A BCBA supervisor organizes a monthly journal club focusing on research and case studies related to culturally diverse populations in ABA, encouraging supervisees to apply new insights to their cases.

### 3. Ethical and Professional Considerations

#### 3.1 Upholding Ethical Standards

- **BACB Ethics Compliance:** Ensure that all culturally responsive practices align with the Ethics Code for Behavior Analysts, including client dignity, informed consent, and confidentiality.
- **Informed Consent:** Clearly explain interventions and supervision expectations, allowing clients and supervisees to make culturally informed decisions.
- **Seek Consultation:** When uncertain about cultural nuances or ethical dilemmas, consult with colleagues, mentors, or ethics boards.

#### 3.2 Maintaining Reflective Practice

- **Self-Assessment:** Regularly assess your own biases and knowledge gaps to continually improve cultural competence.
- **Solicit Feedback:** Ask clients, families, and supervisees for feedback on whether the services and supervision strategies are culturally considerate.
- **Document and Evaluate:** Keep detailed records of culturally responsive approaches and evaluate their effectiveness, adjusting as needed.

### **E.11. Identify personal biases and how they might interfere with professional activity.**

#### Identifying Personal Biases and Their Impact on Professional Activity

## THE BCBA EXAM STUDY GUIDE

In applied behavior analysis (ABA), behavior analysts strive to make objective, data-driven decisions. However, personal biases—whether conscious or unconscious—can influence how professionals perceive clients, develop interventions, and interact with stakeholders. Recognizing and addressing these biases is essential for ethical practice, as outlined in the Ethics Code for Behavior Analysts (2022).

### 1. Understanding Personal Biases

#### 1.1 Definition of Bias

A bias is a tendency to perceive or judge situations, individuals, or groups based on one's preconceived notions, cultural background, or personal experiences rather than objective evidence. Biases can be explicit (deliberately held beliefs) or implicit (subconscious assumptions).

#### 1.2 Sources of Bias

- **Cultural Background:** Cultural norms and values can lead a practitioner to favor certain intervention strategies or overlook culturally relevant factors.
- **Personal Experiences:** Past interactions or relationships can shape expectations and judgments about new clients or supervisees.
- **Societal Stereotypes:** Widespread social or media portrayals can subtly influence how one views specific populations or behaviors.

Example: A BCBA might assume that a family from a particular cultural background is less willing to engage in therapy sessions because of personal stereotypes, rather than assessing each family's unique circumstances.

### 2. How Biases Interfere with Professional Activity

#### 2.1 Skewed Assessment and Goal Setting

Biases can lead to incomplete or incorrect assessments of a client's abilities and needs. As a result, intervention goals may not accurately reflect the client's true potential or challenges.

Example: A BCBA might underestimate a client's language skills due to preconceived notions about the client's cultural or socioeconomic status, resulting in lower treatment expectations.

#### 2.2 Unequal Treatment or Attention

Behavior analysts might allocate more time or resources to clients or supervisees they identify with or favor, neglecting others who may have equal or greater needs.

Example: A supervisor may provide more extensive feedback to a supervisee with whom they share a cultural background, inadvertently limiting the growth opportunities of other supervisees.

### 2.3 Miscommunication and Conflict

Biases can lead to misunderstandings, strained relationships, and conflicts among clients, families, and team members. Communication may be hindered by assumptions or judgments that are not grounded in fact.

Example: A BCBA who holds negative beliefs about certain parenting styles might dismiss a parent's input during treatment planning, causing tension and reducing collaboration.

### 2.4 Ethical Violations

Failure to address personal biases can result in ethical breaches, such as discriminatory practices, inadequate informed consent, or violation of a client's dignity and autonomy.

Example: A BCBA might inadvertently push an intervention that aligns with their personal values rather than the client's preferences or cultural norms, compromising the client's autonomy.

## 3. Strategies for Identifying and Addressing Bias

### 3.1 Self-Reflection and Awareness

Regularly examine personal values, beliefs, and emotional responses in professional situations. Acknowledge that everyone holds biases and that identifying them is a vital first step in reducing their impact.

Example: A BCBA spends time each week reflecting on interactions with clients and supervisees, noting any discomfort, assumptions, or judgments that arise.

### 3.2 Seek Feedback and Consultation

Encourage peers, supervisors, or mentors to provide honest feedback. Consultation helps uncover biases that may not be evident to the individual.

Example: A BCBA asks a colleague to observe a session or review notes to identify any language or actions that might suggest bias.

### 3.3 Engage in Ongoing Education

Attend workshops, trainings, or conferences on cultural humility and bias awareness. Reading literature on diversity, equity, and inclusion can help behavior analysts broaden their perspectives.

Example: A BCBA participates in a continuing education course on implicit bias and reflects on how new insights can be integrated into practice.

### 3.4 Use Standardized Procedures

Implement objective, evidence-based assessments and data-driven decision-making processes to minimize subjective judgments. Ensure that all interventions are based on client-specific data rather than assumptions.

Example: When developing treatment goals, a BCBA relies on standardized assessments and direct observation data rather than anecdotal impressions or stereotypes.

### 3.5 Respect Individual Differences

Ensure that all behavior-analytic services are sensitive to the client's cultural, linguistic, and personal context. Adjust interventions to align with each client's values and circumstances.

Example: A BCBA collaborates with a family to adapt a skill acquisition program that incorporates culturally relevant examples and reinforcers.

## **E.12. Identify and apply the legal, regulatory, and practice requirements (e.g., licensure, jurisprudence, funding, certification) relevant to the delivery of behavior analytic services.**

### Identifying and Applying Legal, Regulatory, and Practice Requirements Relevant to Behavior Analytic Services

Behavior analysts must not only adhere to the Ethics Code for Behavior Analysts (2022) but also navigate a range of legal, regulatory, and practice requirements to ensure ethical and compliant service delivery. These requirements can include licensure laws, jurisprudence exams, funding regulations, and certification standards. Staying informed and compliant promotes the integrity of the profession and safeguards client welfare.

#### 1. Licensure and Certification

##### 1.1 Licensure Requirements

- **State-Specific Laws:** Many states in the U.S. and jurisdictions worldwide require behavior analysts to hold a specific state license or registration to practice ABA. Requirements often include minimum education, supervised experience, and passing an exam.
- **Scope of Practice:** Licensure delineates the scope of practice, specifying which activities behavior analysts can and cannot perform within a given jurisdiction.
- **Renewal and Continuing Education:** Licenses typically require periodic renewal, including proof of continuing education (CE) hours to maintain competence.

Example: A BCBA in a state that mandates licensure for ABA providers must complete a set number of CE hours and pass a jurisprudence exam every two years to renew their license.

## 1.2 BACB Certification

- **Initial Certification (BCBA, BCaBA, RBT):** The Behavior Analyst Certification Board (BACB) sets credentialing standards, including coursework, supervised fieldwork, and a certification exam.
- **Maintenance of Certification:** Behavior analysts must adhere to the Ethics Code and meet ongoing CEU requirements, including ethics-specific credits, to maintain their certification.
- **Scope of Competence:** Certified behavior analysts must practice within their areas of competence and refer out when needed.

Example: A BCBA who has expertise in early intervention but lacks experience with organizational behavior management (OBM) would refer an OBM case to a more qualified colleague rather than attempt to practice outside their scope.

## 2. Jurisprudence and Legal Compliance

### 2.1 Jurisprudence Exams

- **Purpose:** Some jurisdictions require practitioners to pass a jurisprudence exam to demonstrate knowledge of local laws, regulations, and ethical expectations.
- **Topics Covered:** These exams typically assess understanding of client rights, reporting requirements (e.g., abuse or neglect), and professional conduct rules.

Example: Before obtaining a behavior analyst license, a practitioner in a state might need to pass a test covering mandatory reporting laws, scope of practice, and record-keeping regulations.

### 2.2 Mandated Reporting and Confidentiality

- **Mandatory Reporting:** Behavior analysts are legally required to report suspected abuse, neglect, or other threats to client welfare according to state or federal laws.
- **Privacy Regulations:** HIPAA (in the U.S.) and other privacy laws protect client information. Compliance involves secure record-keeping, informed consent, and careful handling of electronic communications.

Example: A BCBA who suspects child abuse must report concerns to the appropriate child protective services agency, even if it strains the therapeutic relationship.

## 3. Funding and Reimbursement

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### 3.1 Insurance and Third-Party Payers

- **Documentation Requirements:** Insurance providers often require detailed treatment plans, functional behavior assessments (FBAs), and progress reports.
- **Billing Practices:** Practitioners must bill accurately, reflecting the services delivered. Falsifying records or inflating service hours is not only unethical but could result in legal action.
- **Medical Necessity:** Some payers require that ABA services demonstrate “medical necessity.” Behavior analysts must be prepared to document how services address clinically significant behaviors.

Example: A BCBA submits monthly progress reports to a private insurance company, showing data on target behaviors and skill acquisition to justify continued coverage of services.

### 3.2 Public Funding Sources

- **Medicaid and Government Programs:** Requirements can vary widely. Some programs have specific mandates for evidence-based practice, service authorizations, and quality assurance measures.
- **Grant Funding:** When funded by grants, behavior analysts must meet the reporting and ethical research standards set by the grantor.

Example: A BCBA providing Medicaid-funded services in a state that covers ABA for children with autism must follow that state’s guidelines for treatment plans and outcome reporting.

## 4. Practice Standards and Professional Responsibilities

### 4.1 Scope of Competence and Referrals

- **Know Your Limits:** Behavior analysts must refer clients to other professionals (e.g., psychologists, physicians) when issues fall outside their competence (e.g., mental health diagnoses, medical concerns).
- **Collaboration:** Interdisciplinary teams may be required for comprehensive care, highlighting the need for clear communication and respect for other professionals’ scopes.

Example: A BCBA recognizes signs of depression in an adolescent client and refers them to a mental health professional while continuing behavior-analytic services to target skill deficits.

### 4.2 Professionalism and Ethics

- **Ethical Conduct:** Comply with the Ethics Code for Behavior Analysts, ensuring transparency, client dignity, and adherence to evidence-based practices.

- Representation of Services: Public statements, advertising, and service descriptions must be accurate and not promise guaranteed outcomes.

Example: A BCBA designs a brochure that accurately describes ABA services, includes realistic outcome expectations, and clearly states qualifications.

## 5. Ensuring Compliance and Continuous Improvement

1. Stay Informed: Keep up to date with changes in local and national regulations, as well as insurance policies and licensure board updates.

2. Regularly Review Ethical Guidelines: Periodically revisit the Ethics Code for Behavior Analysts to guide decision-making.

3. Document Thoroughly: Maintain comprehensive records of client sessions, billing, supervision activities, and any communications with funding sources or regulatory bodies.

4. Consult and Seek Supervision: When in doubt about legal or regulatory issues, consult with a knowledgeable supervisor, attorney, or ethics board.

5. Engage in Ongoing Professional Development: Participate in continuing education that covers legal and ethical aspects of practice, ensuring you remain competent and compliant.

## Conclusion

Behavior analysts must navigate a complex interplay of licensure laws, certification standards, jurisprudence requirements, and funding regulations to practice ethically and effectively. By staying informed, maintaining thorough documentation, and upholding professional and legal standards, behavior analysts protect the welfare of their clients, preserve their professional integrity, and contribute positively to the field of ABA.

## E. Ethical and Professional Issues Quiz:

### Multiple-Choice Quiz

**1. Which of the following best reflects the principle of “benefit others” in the Ethics Code for Behavior Analysts?**

A. Creating interventions solely based on personal interests.

- B. Prioritizing socially significant goals that enhance a client's quality of life.
- C. Focusing on research that elevates one's own status without benefiting the client.
- D. Implementing the least costly intervention regardless of effectiveness.

**2. Engaging in unethical behavior can pose risks to**

- A. Only the individual BCBA's reputation.
- B. Clients and families, but not the overall field of ABA.
- C. Oneself, clients, and the profession at large.
- D. Only supervisees under the BCBA's direction.

**3. Which scenario most clearly violates confidentiality requirements?**

- A. Keeping client records in a locked cabinet accessible only to authorized personnel.
- B. Discussing a client's case in a private office with a treatment team member.
- C. Posting identifiable client data on social media to celebrate the client's progress.
- D. Requesting client consent to share clinical results with a specialist.

**4. A BCBA who wants to maintain competence ethically should**

- A. Rely solely on their graduate school education without additional training.
- B. Complete required continuing education units (CEUs) and stay current with the literature.
- C. Practice outside their area of expertise if it enhances billing opportunities.
- D. Avoid seeking feedback from colleagues to preserve independence.

**5. If a BCBA must discontinue services, which of the following steps should they take?**

- A. Immediately stop services without providing a referral to another professional.
- B. Maintain complete secrecy about the discontinuation to protect themselves legally.
- C. Collaborate with the client to arrange a smooth transition and provide referrals.
- D. Continue billing for sessions until the next renewal period.

**6. Which of the following is an example of a multiple relationship that may need mitigation?**

- A. Supervising a former colleague who now works at a different agency.

- B. Treating a neighbor's child while regularly socializing with the family on weekends.
- C. Providing pro bono services to a client referred by an insurance agency.
- D. Consulting with a professional who has expertise in a different field.

**7. To mitigate the risks of an unavoidable multiple relationship, a BCBA should**

- A. Pretend the personal relationship does not exist and continue as usual.
- B. Obtain informed consent, set clear boundaries, and document all professional interactions.
- C. Ignore supervision guidelines if the relationship complicates the case.
- D. Discuss the client's personal life publicly to normalize the dual role.

**8. When making public statements about professional activities, a behavior analyst must**

- A. Guarantee client outcomes to attract more referrals.
- B. Use simplified language that exaggerates ABA's effectiveness.
- C. Accurately represent credentials, services, and outcomes.
- D. Disclose all confidential client information to demonstrate openness.

**9. Active listening is an example of an interpersonal skill that**

- A. Involves dominating the conversation to ensure the speaker's compliance.
- B. Focuses on partial attention to the speaker while multitasking.
- C. Serves as a tool for building trust and accurately understanding stakeholders' concerns.
- D. Encourages behavior analysts to provide constant advice without feedback from the speaker.

**10. Which action demonstrates cultural humility in service delivery?**

- A. Assuming all families share the same values and communication styles.
- B. Asking a family about their cultural background and incorporating relevant traditions into the intervention.
- C. Relying solely on personal cultural perspectives to design interventions.
- D. Discouraging client input about cultural preferences to maintain professional authority.

**11. A BCBA is delivering services to a community with cultural practices unfamiliar to them. Which response is most appropriate?**

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- A. Proceed with standard interventions without modification.
- B. Conduct research, consult cultural liaisons, and adapt interventions to align with the community's practices.
- C. Ask the community to change their customs to fit typical ABA procedures.
- D. Avoid discussing cultural influences so as not to offend the community.

**12. Why is it important for a BCBA to identify personal biases?**

- A. To ensure they always have the final say in treatment decisions.
- B. To recognize factors that might influence objective decision-making and client interactions.
- C. To strictly enforce their personal beliefs in all client programs.
- D. To prioritize their own cultural values over those of the client.

**13. Which of the following best illustrates a BCBA practicing within their scope of competence?**

- A. Taking on a forensic case without any training in forensic behavior analysis.
- B. Referring a client to a specialist when the BCBA recognizes a lack of expertise in the client's presenting issues.
- C. Providing medical advice about medications without consulting a physician.
- D. Accepting any case that provides financial compensation.

**14. A BCBA is asked to provide an official statement about their services for marketing purposes. Which approach follows ethical guidelines?**

- A. Offering a guarantee that their interventions will cure all behavior issues.
- B. Stating credentials accurately and providing evidence-based descriptions of services and typical outcomes.
- C. Including client names and testimonials without their explicit permission.
- D. Citing personal anecdotes instead of clinical data to emphasize results.

**15. Which of the following scenarios most likely requires discontinuation of services?**

- A. The client has met all targeted goals, and further intervention does not add value.
- B. The client occasionally disagrees with the chosen intervention strategy.

C. The client is making moderate progress but wants to switch to a different BCBA for personal reasons.

D. The BCBA is receiving lower reimbursement rates than expected.

**16. One key risk of unethical behavior for the profession of ABA is**

A. A temporary increase in client satisfaction.

B. Damage to the field's credibility and public trust.

C. Improved collaboration among interdisciplinary teams.

D. A surge in research funding for ABA.

**17. Which best represents culturally responsive supervision?**

A. Providing the same supervisory methods to all supervisees regardless of background.

B. Encouraging supervisees to adapt their cultural values to match the supervisor's.

C. Tailoring feedback and training approaches to consider a supervisee's language, cultural context, and learning style.

D. Avoiding discussions about cultural influences to maintain a strictly professional setting.

**18. A multiple relationship is considered unavoidable if**

A. The BCBA seeks out personal connections with clients for financial gain.

B. Circumstances such as living in a remote area limit options for providers.

C. A BCBA wants to form a dual relationship for convenience.

D. No clients are available except for those who are personal friends.

**19. Personal biases can interfere with professional activity by**

A. Encouraging better collaboration with families.

B. Causing the BCBA to view client behaviors objectively.

C. Leading to skewed assessments, unequal treatment, and ethical violations.

D. Enhancing the BCBA's ability to serve diverse populations effectively.

**20. According to typical licensing and legal requirements for behavior analysts, which statement is most accurate?**

A. Licensure and certification standards never change.

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- B. Reporting suspected abuse is optional if it may damage rapport with the client.
- C. Behavior analysts must follow state licensing laws, maintain BACB certification, and comply with all privacy regulations.
- D. Completing continuing education is suggested but not required by licensure boards.

### ASSIGNMENT

Applied Supervision Assignment Plan, revised to include one required video assignment per section of the BACB 6th Edition Task List. These video tasks are designed to demonstrate applied competence and support mastery through direct modeling or verbal explanation.

#### **Section E: Ethics**

1. Responding to Ethical Dilemmas

Write up solutions to three ethical dilemmas referencing BACB Ethics Code (2022).

2. Dual Relationships Policy

Draft a policy on managing dual relationships in home-based services.

3. Informed Consent Training

Prepare a training using a real or mock example illustrating informed consent and assent.

4. Parent Discussion Role-Play

Role-play discussing data with a parent, considering ethics.

Video Assignment:

“Ethical Conversation Simulation” – Record a mock discussion with a parent or colleague where you explain a sensitive ethical issue (e.g., fading services, lack of progress, informed consent), demonstrating professionalism and ethics code alignment.

## **Section E**

### **Primary Books**

#### **(Foundational Sources)**

1. Bailey, J. S., & Burch, M. R. (2016). Ethics for behavior analysts (3rd ed.). Routledge.

(Primary textbook almost everyone uses for ABA ethics training.)

2. Bailey, J. S., & Burch, M. R. (2022). Ethics for behavior analysts (4th ed.). Routledge.

(Newest edition — even better if you want the most updated examples including cultural humility and social media issues.)

3. Behavior Analyst Certification Board (BACB). (2020). Ethics Code for Behavior Analysts.

<https://www.bacb.com/wp-content/uploads/2020/11/Ethics-Code-for-Behavior-Analysts-210201.pdf>

(The actual 2022 BACB Ethics Code we follow — essential.)

4. Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). Applied behavior analysis (3rd ed.). Pearson.

(Chapters on professional and ethical compliance code; references to informed consent, client dignity, supervision.)

### **Journal Articles**

#### **(Important Ethical Case Studies, Commentary, and Research)**

1. Brodhead, M. T. (2015). Maintaining professional relationships in an interdisciplinary setting: Strategies for navigating nonbehavioral ethical challenges. Behavior Analysis in

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Practice, 8(1), 70–78. <https://doi.org/10.1007/s40617-015-0041-5>

(Handling interdisciplinary teams ethically.)

2. Brodhead, M. T., Quigley, S. P., & Wilczynski, S. M. (2018). A call for the integration of cultural humility in behavior analysis. *Behavior Analysis in Practice*, 11(1), 50–60. <https://doi.org/10.1007/s40617-018-0233-0>

(Critical paper on cultural humility, now formally part of the BACB expectations.)

3. Turner, L. B., Fischer, A. J., & Luiselli, J. K. (2016). Practicing behavior analysts' adherence to ethical guidelines in their professional activities. *Behavior Analysis in Practice*, 9(4), 307–312. <https://doi.org/10.1007/s40617-016-0124-5>

(Study on how BCBAAs report ethical decision-making and barriers.)

4. Taylor, B. A., LeBlanc, L. A., & Nosik, M. R. (2019). Ethical considerations for applied behavior analysis practitioners during the COVID-19 pandemic. *Behavior Analysis in Practice*, 13(2), 312–320. <https://doi.org/10.1007/s40617-020-00429-x>

(Modern application of ethical guidelines in complex situations — telehealth, client safety, etc.)

### **Webpages**

#### **(Official, Reputable Sources)**

1. Behavior Analyst Certification Board (BACB). (2022). Ethics Code for Behavior Analysts.

<https://www.bacb.com/ethics-information/>

(Main BACB ethics page — links to codes, training modules, violations.)

2. Association for Behavior Analysis International (ABAI). (n.d.). Special Interest Groups: Behavior Analyst Certification Board (BACB).

<https://www.abainternational.org/special-interest-groups/bacb.aspx>

(Support information about ethics and guidelines from ABAI.)

3. Cambridge Center for Behavioral Studies. (n.d.). Ethical Considerations in Behavior Analysis.

<https://behavior.org/behavior-analysis/>

(General reinforcement of ethical standards and client protection.)

4. University of West Florida (UWF) ABA Program. (n.d.). Ethical Practices in ABA. (Supplemental course page with ethics modules, if accessible.)

## KEY DEFINITIONS SECTION E

### Confidentiality-

The practice of ensuring that information shared by clients in the course of receiving services is not disclosed to unauthorized individuals or entities.

### Conflict of interest

A situation in which a person in a position of responsibility or trust has competing professional or personal interests that make it difficult to fulfill his or her duties impartially.

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### Ethical codes of behavior

Documents generated or adopted by professional organizations that provide clear guidelines for their members when deciding a course of proper action in conducting their professional duties

### Ethics

Behaviors, practices and decisions that address such basic and fundamental questions as the following:

What is the right thing to do?

What's worth doing?

What does it mean to be a good behavior analytic practitioner? The Behavior Analyst Certification Board's Professional and Ethical Compliance Code for Behavior Analysts details ethical practice for behavior analysts.

### Informed consent

A process by which a client or their guardian agrees to a proposed intervention or assessment after being fully informed of all relevant facts, including risks and benefits.

**F. Behavior Assessment**

F.1. Identify relevant sources of information in records (e.g., educational, medical, historical) at the outset of the case.
F.2. Identify and integrate relevant cultural variables in the assessment process.
F.3. Design and evaluate assessments of relevant skill strengths and areas of need.
F.4. Design and evaluate preference assessments.
F.5. Design and evaluate descriptive assessments.
F.6. Design and evaluate functional analyses.
F.7. Interpret assessment data to determine the need for behavior-analytic services and/or referral to others.
F.8. Interpret assessment data to identify and prioritize socially significant, client-informed, and culturally responsive behavior-change procedures and goals

**F.1. Identify relevant sources of information in records (e.g., educational, medical, historical) at the outset of the case.**

Identifying Relevant Sources of Information in Records at the Outset of an Applied Behavior Analysis (ABA) Case

When beginning an Applied Behavior Analysis (ABA) case, gathering comprehensive background information is crucial for developing an effective, individualized intervention plan. This process involves reviewing various records, including educational, medical, and historical documents, to gain insight into the client's needs, previous interventions, and potential barriers to progress. Below is an overview of key record sources and their relevance to ABA assessments and interventions.

**1. Educational Records**

Educational documents provide critical insights into a client's academic performance, learning history, and behavioral patterns in school settings. These records may include:

- Individualized Education Programs (IEPs): Outlines goals, accommodations, and services provided in school. Analyzing IEPs helps ABA practitioners align interventions with existing educational supports.
- 504 Plans: Documents accommodations for students with disabilities who do not qualify for special education services under an IEP.
- Behavior Intervention Plans (BIPs): If previously implemented, these plans reveal past behavioral strategies, effectiveness, and ongoing concerns.
- Psycho educational Evaluations: Conducted by school psychologists, these evaluations assess cognitive abilities, learning disabilities, and emotional-behavioral functioning, helping ABA professionals understand potential learning barriers.
- Teacher and Progress Reports: Offer qualitative and quantitative data on classroom behavior, social interactions, and academic performance over time.

**2. Medical Records**

Medical history is essential in ABA practice as it may provide information on diagnoses, medications, and other health factors influencing behavior. Key records include:

- **Developmental History Reports:** Helps determine early developmental milestones, delays, or disabilities.
- **Diagnosis Reports (e.g., ASD, ADHD, and Anxiety Disorders):** Understanding medical diagnoses assists in designing appropriate interventions tailored to specific conditions.
- **Medication History:** Certain medications (e.g., stimulants for ADHD, antipsychotics for aggression) impact behavior and response to ABA strategies. Awareness of medication side effects can help distinguish medical influences from behavioral patterns.
- **Speech and Occupational Therapy Reports:** Collaboration with other therapists provides insights into communication abilities, motor skills, and sensory processing concerns.
- **Genetic or Neurological Assessments:** Some individuals may have genetic syndromes (e.g., Fragile X, Rett Syndrome) affecting behavior, requiring specialized ABA approaches.

### 3. Historical and Family Records

A thorough understanding of past interventions, familial involvement, and environmental factors is crucial in ABA treatment planning. Important sources include:

- **Previous ABA Assessments and Treatment Plans:** Reviewing past functional behavior assessments (FBAs) and treatment plans helps identify successful and unsuccessful interventions.
- **Family History and Parent Reports:** Parents and caregivers provide valuable qualitative insights into behaviors across different settings and historical changes in behavior.
- **Social History Reports:** If available, social history records from therapists or case managers can provide information on family dynamics, trauma, or environmental stressors impacting behavior.
- **Court or Child Welfare Documents:** In cases involving foster care, custody disputes, or child protection services, understanding the child's legal and living situation is critical.

## **F.2. Identify and integrate relevant cultural variables in the assessment process.**

Identifying and Integrating Relevant Cultural Variables in the Assessment Process for ABA Therapy

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Cultural competence is essential in Applied Behavior Analysis (ABA) to ensure assessments and interventions are tailored to a client's unique background, values, and experiences. When conducting ABA assessments, practitioners must recognize and integrate relevant cultural variables to provide effective and ethical services. Below is an exploration of key cultural considerations and how they impact the ABA assessment process.

### 1. Understanding Cultural Variables in ABA Assessments

Cultural variables refer to the values, beliefs, communication styles, traditions, and social norms that shape an individual's behavior and worldview. These variables influence how behavior is expressed, perceived, and addressed within a given cultural context. Important cultural factors to consider in ABA assessments include:

- **Language and Communication Styles:** The client's primary language, dialect, or communication method (e.g., verbal, nonverbal, sign language) impacts how assessments are conducted and how behaviors are interpreted.
- **Family Structure and Roles:** Cultural perspectives on parenting, caregiving, and extended family involvement influence how behavior is managed and who participates in therapy.
- **Religious and Spiritual Beliefs:** Some behaviors may be shaped by religious practices, and certain interventions may need to be adapted to respect these beliefs.
- **Social Expectations and Norms:** Eye contact, personal space, greetings, and other social behaviors vary across cultures and should be assessed within their cultural context.
- **Views on Disability and Therapy:** Some cultures may have stigmas associated with developmental disorders or therapy, affecting parental buy-in and participation in ABA services.
- **Dietary Practices and Health Beliefs:** Certain cultures have dietary restrictions or health remedies that can influence behavioral reinforcement strategies.

### 2. Integrating Cultural Variables into ABA Assessments

To conduct culturally responsive ABA assessments, practitioners should implement the following strategies:

#### A. Conduct a Culturally Informed Intake Process

During the initial assessment, ABA professionals should gather detailed cultural background information, including:

- Preferred language and need for interpreters.
- Family perspectives on disability, therapy, and behavioral expectations.

- Social norms and communication styles relevant to the client's cultural background.
- Religious or dietary considerations that may impact intervention planning.

#### B. Use Culturally Appropriate Assessment Tools

- Ensure that assessment tools (e.g., Functional Behavior Assessments [FBAs], standardized tests) are validated for use with diverse populations.
- Adapt assessments to accommodate cultural differences in communication and behavior.
- Use multiple methods (e.g., interviews, direct observation, caregiver reports) to capture an accurate picture of behavior within a cultural context.

#### C. Collaborate with Families and Community Members

- Engage parents, caregivers, and extended family members to gain insights into culturally appropriate interventions.
- Seek guidance from cultural liaisons, interpreters, or community organizations when needed.
- Respect family preferences regarding who should be involved in therapy sessions.

#### D. Interpret Behavior within a Cultural Framework

- Avoid pathologizing culturally normative behaviors (e.g., lack of eye contact may be a sign of respect rather than avoidance).
- Differentiate between behavior concerns that require intervention and those that are culturally appropriate.
- Consider environmental and cultural influences when determining the function of behavior.

#### E. Adapt Intervention Strategies to Align with Cultural Values

- Use culturally relevant reinforcers that are meaningful to the client and family.
- Modify goals and teaching strategies to fit within the family's cultural expectations.
- Incorporate culturally significant routines and traditions into intervention plans.

### 3. Addressing Bias and Enhancing Cultural Competence in ABA Practice

ABA professionals must engage in ongoing self-reflection and training to minimize cultural bias. Strategies include:

- Participating in cultural competence training.
- Seeking supervision or consultation when working with unfamiliar cultural groups.
- Recognizing and challenging personal biases in assessment and intervention planning.
- Encouraging open communication with families to ensure interventions are respectful and effective.

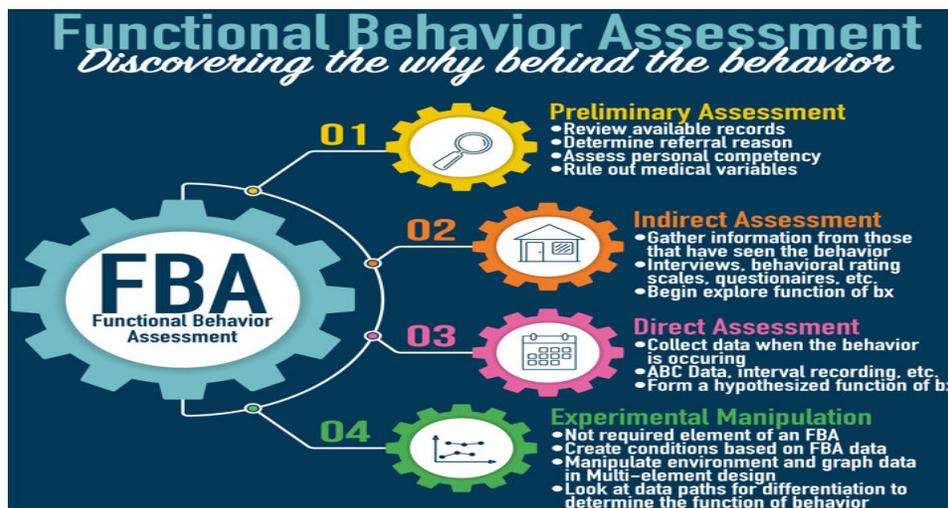
### F.3. Design and evaluate assessments of relevant skill strengths and areas of need.

Designing and Evaluating Assessments of Relevant Skill Strengths and Areas of Need in ABA Therapy

Assessing a client's strengths and areas of need is a fundamental step in Applied Behavior Analysis (ABA) therapy. A well-designed assessment ensures that interventions are tailored to the individual, maximizing progress and skill acquisition. This process involves selecting appropriate assessment tools, evaluating skill domains, and continuously monitoring progress. Below is an overview of how to design and evaluate assessments in ABA therapy.

#### 1. Designing Assessments in ABA Therapy

##### A. Identifying the Purpose of the Assessment



Before selecting assessment tools, ABA practitioners must determine the specific goals of the assessment. Common assessment purposes include:

- Identifying skill deficits and strengths.
- Determining the function of challenging behaviors.
- Establishing baseline performance levels for skill development.
- Informing individualized treatment planning.

## B. Selecting Appropriate Assessment Tools

A combination of direct and indirect assessments ensures a comprehensive understanding of the client's abilities.

### 1. Direct Assessments (Observation and Performance-Based Measures)

- **Functional Behavior Assessment (FBA):** Identifies the function of challenging behaviors to develop effective behavior intervention plans (BIPs).
- **Skills-Based Assessments:** Measures strengths and deficits in communication, social, adaptive, and academic skills. Examples include:
  - **Verbal Behavior Milestones Assessment and Placement Program (VB-MAPP)** – Assesses language and communication skills.
  - **Assessment of Basic Language and Learning Skills-Revised (ABLLS-R)** – Measures communication, self-help, and social skills.
  - **Promoting the Emergence of Advanced Knowledge (PEAK)** – Evaluates relational and cognitive language skills.
  - **Essential for Living (EFL)** – Focuses on communication, problem-solving, and daily living skills for individuals with significant disabilities.

### 2. Indirect Assessments (Interviews, Questionnaires, and Records Review)

- **Parent and Caregiver Interviews:** Provides insight into the client's behavior across different environments.
- **Standardized Questionnaires:** Helps assess adaptive behavior, social skills, and emotional functioning. Common tools include:
  - **Vineland Adaptive Behavior Scales (Vineland-3)** – Assesses daily living, communication, and socialization skills.

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- Social Skills Improvement System (SSIS) – Measures social skills and problem behaviors.
- Review of Records: Examines IEPs, medical history, and previous assessments to identify existing supports and challenges.

### C. Evaluating Relevant Skill Domains

ABA assessments should evaluate multiple domains to create a well-rounded skill profile:

1. Communication & Language – Evaluating expressive, receptive, and pragmatic language skills.
2. Social Skills & Play – Assessing peer interactions, turn-taking, and joint attention.
3. Adaptive (Daily Living) Skills – Measuring self-care, hygiene, and independent living skills.
4. Academic & Pre-Academic Skills – Determining abilities in reading, math, and problem-solving.
5. Motor Skills – Evaluating fine and gross motor coordination.
6. Behavioral Regulation – Identifying self-regulation, compliance, and emotional control challenges.

### 2. Evaluating the Effectiveness of Assessments

#### A. Analyzing Assessment Results

After data collection, ABA practitioners must analyze results to identify:

- Skill strengths: Areas where the client demonstrates proficiency.
- Skill deficits: Areas requiring targeted intervention.
- Behavioral concerns: Patterns of maladaptive behavior and their potential functions.

#### B. Developing Data-Driven Treatment Plans

Assessment data should directly inform treatment planning, including:

- Establishing measurable goals: Setting SMART (Specific, Measurable, Achievable, Relevant, Time-bound) goals.
- Prioritizing skills based on client needs: Addressing functional skills before academic or non-essential skills.
- Selecting evidence-based interventions: Aligning strategies with assessment findings (e.g., Discrete Trial Training (DTT) for language deficits, Natural Environment Teaching (NET) for social skills).

#### C. Monitoring Progress and Reevaluating Needs

Assessments should not be a one-time process but an ongoing aspect of ABA therapy. Strategies for continuous evaluation include:

- Regular Progress Monitoring: Using data collection systems (e.g., graphs, frequency counts) to track skill acquisition.
- Frequent Reassessment: Conducting periodic reassessments (e.g., every 3-6 months) to measure growth and adjust interventions.
- Team Collaboration: Reviewing data with caregivers, educators, and therapists to ensure comprehensive progress tracking.

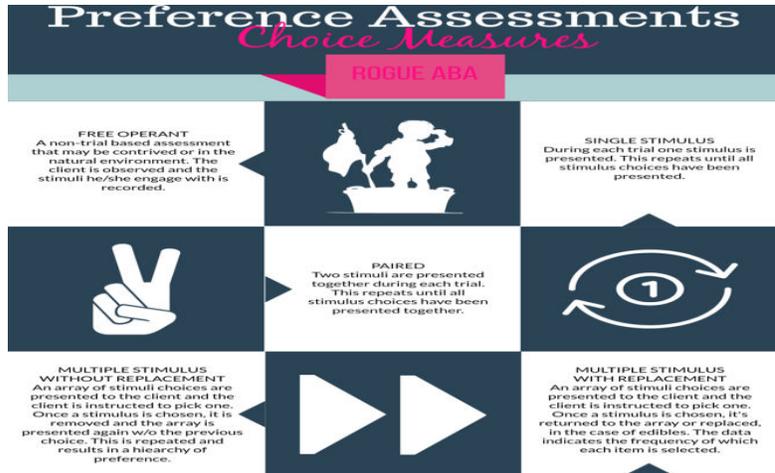
#### **F.4. Design and evaluate preference assessments.**

##### Designing and Evaluating Preference Assessments in ABA Therapy

Preference assessments are a crucial component of Applied Behavior Analysis (ABA) therapy. They help identify stimuli that are motivating and reinforcing for an individual, which can then be used to strengthen desired behaviors during intervention. By systematically assessing preferences, ABA practitioners ensure that reinforcement strategies are effective, individualized, and based on empirical data.

##### 1. What Are Preference Assessments?

A preference assessment is a structured method of determining which items, activities, or stimuli a client finds most motivating. While preference does not always equate to reinforcement, identifying preferred items increases the likelihood of effective reinforcement strategies.



Types of Preferences That Can Be Assessed:

- Tangible Items (e.g., toys, snacks, electronics)
- Activities (e.g., swinging, listening to music, watching videos)
- Social Interactions (e.g., high fives, tickles, praise)
- Sensory Stimuli (e.g., lights, textures, sounds)
- Edibles (e.g., crackers, fruit, candy)

2. Designing Preference Assessments

ABA practitioners use different types of preference assessments depending on the client’s abilities, setting, and specific needs.

A. Indirect Preference Assessments (Interviews & Surveys)

- Caregiver/Parent/Teacher Interviews: Ask about known preferred items.
- Structured Questionnaires: Tools like the Reinforcer Assessment for Individuals with Severe Disabilities (RAISD) provide structured insight into preferences.
- Self-Report (If Verbal): If the client can communicate, they may verbally or pictorially select their preferred items.

Limitations:

- May not always be reliable (caregivers’ perceptions may not match actual preferences).
- Does not measure actual engagement or reinforcement effectiveness.

B. Direct Preference Assessments (Empirical Testing)

These involve observing a client's interactions with items to determine their preference level.

### 1. Free-Operant Preference Assessment

- The client is given unrestricted access to multiple stimuli, and interactions are observed.
- Items interacted with most frequently or for the longest duration are considered highly preferred.
- Can be naturalistic (in the client's natural environment) or contrived (structured with specific items).

Pros:

- Quick to administer.
- Reduces problem behavior associated with removing items.
- Measures duration of engagement.

Cons:

- May not accurately rank lower-preferred items.
- Client may repeatedly engage with only one item.

### 2. Single-Stimulus Preference Assessment ("Successive Choice")

- Items are presented one at a time, and the client's response (approach, interaction, rejection) is recorded.

Pros:

- Useful for individuals with limited choice-making abilities.
- Provides a clear indication of absolute preferences.

Cons:

- Does not establish a ranking among multiple preferred items.

### 3. Paired-Stimulus Preference Assessment ("Forced Choice")

- Two items are presented at a time, and the client chooses one.
- Each item is paired with all others in a systematic manner.
- Selection percentage is recorded to establish a ranking of preferences.

Pros:

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- Highly effective in identifying strong preferences.
- More accurate ranking than free-operant or single-stimulus assessments.

Cons:

- Time-consuming.
- May be difficult for individuals with limited choice-making skills.

### 4. Multiple-Stimulus Preference Assessment

This method involves presenting multiple items simultaneously and recording selections. It can be done in two ways:

- **Multiple Stimulus without Replacement (MSWO):** After an item is selected, it is removed from the array, forcing the client to choose from remaining options.
- **Multiple Stimulus with Replacement (MSW):** The selected item is placed back into the array for the next trial.

Pros:

- Faster than paired-stimulus.
- Provides a ranked order of preferences.

Cons:

- MSW may not accurately rank all items.
- MSWO requires the ability to tolerate item removal.

### 4. Evaluating Preference Assessments

#### A. Analyzing Data from Preference Assessments

- **Calculate Selection Percentages:** Rank items based on frequency of selection.
- **Measure Duration of Engagement:** Higher engagement often indicates stronger preference.
- **Compare across Assessments:** Verify consistency of preferences across different methods.

#### B. Conducting Reinforcer Assessments (Testing Effectiveness of Preferred Stimuli)

A reinforcer assessment is conducted after a preference assessment to confirm whether a highly preferred item actually increases desired behavior. Common methods include:

- **Concurrent Schedule Reinforcer Assessment:** Client chooses between two tasks, each reinforced by different stimuli. Higher response rates indicate stronger reinforcement value.
- **Progressive-Ratio Reinforcer Assessment:** Determines how hard the client will work for a reinforcer by increasing response effort.
- **Single-Operant Reinforcer Assessment:** A single reinforcer is provided for a response, and response rates are measured.

#### C. Adjusting Preferences over Time

- Preference changes over time, requiring periodic reassessment.
- New items should be introduced to expand reinforcer options.
- Environmental influences (e.g., satiation, novelty) should be considered when evaluating effectiveness.

### **F.5. Design and evaluate descriptive assessments.**

#### Designing and Evaluating Descriptive Assessments in ABA Therapy

Descriptive assessments are a key component of Applied Behavior Analysis (ABA) that help identify the environmental variables influencing behavior. Unlike functional analyses, which systematically manipulate conditions, descriptive assessments rely on direct observation of behavior in natural settings. These assessments help ABA practitioners develop hypotheses about the function of behavior, guiding intervention planning.

##### 1. What Are Descriptive Assessments?

A descriptive assessment is an observational method used to gather data on a client's behavior in real-life situations. The goal is to identify patterns and relationships between the behavior and environmental events, such as antecedents (triggers) and consequences (responses to behavior).

Descriptive assessments do not manipulate variables but provide real-time data on behavior as it naturally occurs. They are commonly used before conducting a functional analysis.

##### 2. Designing Descriptive Assessments

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To ensure effectiveness, descriptive assessments must be systematically designed. This involves defining the target behavior, selecting appropriate data collection methods, and conducting structured observations.

### A. Define the Target Behavior

Before starting an assessment, ABA practitioners must operationally define the behavior of interest.

- Example (Poor Definition): “The client is aggressive.”
- Example (Clear Definition): “Aggression is defined as hitting, kicking, or pushing others with force, resulting in physical contact.”

A well-defined behavior ensures consistent data collection across observers.

### B. Select a Descriptive Assessment Method

There are three main types of descriptive assessments:

#### 1. ABC Recording (Antecedent-Behavior-Consequence)

- The most common descriptive assessment method.
- Observers record the antecedent (what happened before the behavior), the behavior itself, and the consequence (what happened immediately after).
- Helps identify patterns in environmental events that may reinforce the behavior.

Example of ABC Data Collection:

Date/Time	Antecedent	Behavior	Consequence	
10:30 AM	Teacher gives a math worksheet.	Client throws the worksheet.	Teacher removes the worksheet.	
1:00 PM	Peer takes the client's toy.	Client bites the peer.	Peer returns the toy.	

Pros:

- Easy to implement.
- Provides real-time context for behavior.

Cons:

- Requires repeated observations to identify consistent patterns.
- Subject to observer bias if antecedents and consequences are not accurately recorded.

## 2. Scatterplot Recording

- Records when and how often a behavior occurs across different time intervals (e.g., every 30 minutes).
- Helps identify patterns related to specific times, locations, or activities.

Example of Scatterplot Data Collection:

Time Slot	Behavior Occurrence
8:00 - 8:30 AM	No behavior
8:30 - 9:00 AM	Behavior occurred
9:00 - 9:30 AM	No behavior
9:30 - 10:00 AM	Behavior occurred

Pros:

- Identifies trends over time.
- Useful for detecting behavior linked to routine changes.

Cons:

- Does not capture antecedents or consequences.
- May require supplemental data (e.g., ABC recording) for function analysis.

## 3. Narrative Recording (Anecdotal Observation)

- A detailed, open-ended description of behavior, antecedents, and consequences.
- More qualitative than structured assessments like ABC recording.

Example of Narrative Recording:

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“At 10:15 AM, the teacher gave instructions for the class to start an independent writing task. The client looked away and put his head down. When the teacher approached to prompt him, he pushed his chair back and said, ‘No!’ The teacher provided encouragement, but the client continued to refuse. The teacher then moved on to another student, and the client remained disengaged for the rest of the task.”

Pros:

- Provides rich, detailed context.
- Useful for complex behaviors.

Cons:

- Time-consuming.
- Difficult to analyze for patterns without additional structured data.

### 3. Evaluating Descriptive Assessments

Once data is collected, ABA practitioners must analyze and evaluate it to determine behavioral patterns and inform intervention strategies.

#### A. Identifying Behavior Patterns

- Common Antecedents: What consistently triggers the behavior? (e.g., transitions, task demands, peer interactions).
- Common Consequences: What happens after the behavior that may reinforce it? (e.g., escape from tasks, attention from adults).
- Time/Location Factors: Does behavior occur more frequently at specific times, settings, or activities?

#### B. Developing Hypotheses about Behavior Function

Based on the descriptive assessment, practitioners can generate hypotheses about the function of behavior using the four main behavior functions:

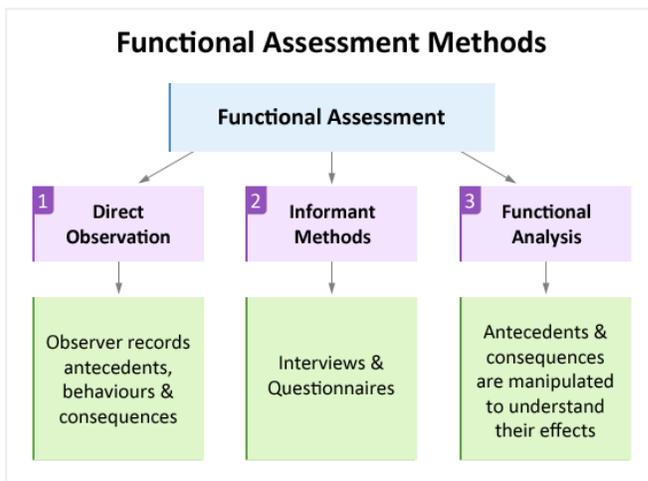
1. Attention-Seeking: Behavior increases when it leads to social attention.
2. Escape/Avoidance: Behavior occurs to avoid a task or demand.
3. Access to Tangibles: Behavior happens to gain access to preferred items or activities.

4. Automatic Reinforcement: Behavior is self-stimulating and occurs independently of the environment.

### C. Validating Findings with Functional Analysis

While descriptive assessments suggest possible functions, a functional analysis (FA) systematically tests those hypotheses by manipulating environmental conditions to confirm behavior functions. If FA is not feasible, continued observation and intervention adjustments may be necessary.

### F.6. Design and evaluate functional analyses.



### Designing and Evaluating Functional Analysis in ABA Therapy

A Functional Analysis (FA) is the most systematic and empirical method for determining the function of a behavior in Applied Behavior Analysis (ABA). Unlike descriptive assessments, which rely on direct observation without manipulation, a functional analysis directly tests hypotheses by systematically altering environmental variables to observe their effects on behavior. This process allows ABA practitioners to design precise, function-based interventions.

#### 1. What Is Functional Analysis?

Functional analysis involves systematically manipulating antecedents and consequences to determine the function of behavior. The goal is to identify which environmental factors reinforce and maintain the behavior.

#### Common Functions of Behavior Identified in FA:

1. Attention-Seeking → the behavior is reinforced by social attention.

2. Escape/Avoidance → the behavior allows the individual to avoid or delay a task or demand.

3. Access to Tangibles → the behavior results in obtaining a desired item or activity.

4. Automatic Reinforcement (Sensory Stimulation) → the behavior is self-reinforcing and occurs independent of external consequences.

## 2. Designing a Functional Analysis

A functional analysis consists of multiple controlled conditions, each testing a different potential function of behavior. The conditions are alternated systematically to see which one reliably produces the behavior.

### A. Selecting the FA Method

There are several variations of functional analysis based on setting, resources, and ethical considerations.

#### 1. Standard (Full) Functional Analysis (Iwata et al., 1982/1994)

- The classic FA model involves four test conditions and a control condition.
- Each condition is presented in randomized 5- to 15-minute sessions to compare rates of problem behavior.

Functional Analysis Conditions:

Condition	Antecedent	Consequence	Hypothesized Function
Attention	No attention is given	Behavior occurs → Attention is provided (e.g., "Don't do that!")	Social Attention
Escape	A demand/task is presented	Behavior occurs → Task is removed temporarily	Escape/Avoidance
Tangible	Preferred item is removed	Behavior occurs → Item is returned	Access to Tangibles
Alone (Automatic Reinforcement Test)	No stimulation, no interaction	Behavior occurs → No external reinforcement provided	Automatic/Sensory
Play (Control Condition)	No demands, noncontingent attention and access to toys	Behavior is expected to be low	Ensures behavior is not due to general distress

Pros:

- The gold standard for identifying behavior function.
- Produces clear, reliable data.

Cons:

- Requires trained staff and controlled environments.
- Can temporarily reinforce problem behavior.
- May not be ethical for severe behaviors that pose safety risks.

2. Brief Functional Analysis (Northup et al., 1991)

- Uses the same conditions as a standard FA but with shorter sessions (5 minutes each) and fewer repetitions.
- Used when time or resources are limited.

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### Pros:

- Faster than a full FA.
- Still provides valid results.

### Cons:

- May not capture less frequent behaviors.
- Less reliable than extended FA.

### 3. Latency-Based Functional Analysis (Bloom et al., 2011)

- Instead of measuring behavior frequency, the analyst measures how long it takes for the behavior to occur after an antecedent is presented.
- The session ends as soon as the behavior occurs, reducing risk of reinforcement.

### Pros:

- Reduces risk of reinforcing problem behavior.
- Useful for severe or dangerous behaviors.

### Cons:

- May not accurately measure behaviors that escalate over time.

### 4. Trial-Based Functional Analysis (Bloom et al., 2013)

- Conducted in natural settings (e.g., classrooms, home).
- Each FA condition is embedded into typical daily activities rather than in a controlled session.

### Pros:

- More practical for schools and home-based ABA therapy.
- Less disruptive to daily routines.

### Cons:

- Less precise than a traditional FA.

## 3. Evaluating Functional Analysis Results

### A. Analyzing Data

Functional analysis data is typically displayed in a line graph, where the rate of behavior in each condition is compared.

- If behavior occurs most in the Attention Condition → Behavior is maintained by attention.
- If behavior occurs most in the Escape Condition → Behavior is maintained by escape.
- If behavior occurs most in the Tangible Condition → Behavior is maintained by access to items.
- If behavior occurs in the Alone Condition → Behavior is maintained by automatic reinforcement.
- If behavior is low in all conditions → It may not be socially maintained, or another function may be present.

<b>Antecedent/Motivating Operation</b>	
<b>Play (Control)</b>	Preferred activities are readily available, social attention is provided, no demands are placed
<b>Attention</b>	Attention is avoided or withheld
<b>Escape</b>	Demands are continuously placed, verbal instruction, modeled target behavior, and physically prompted through demand
<b>Alone</b>	Minimal stimuli and individuals in direct environment

<b>Consequence</b>	
<b>Play (Control)</b>	Target behavior is ignored or neutrally redirected
<b>Attention</b>	Attention is given for the target behavior in the form of reprimand with soothing statements (oh no! That hurts, please don't do that)
<b>Escape</b>	A break is given or the task is removed when the target behavior is emitted
<b>Alone</b>	Target behavior is ignored or neutrally redirected

#### B. Functional Communication Training (FCT) as a Follow-Up

- Once a function is identified, ABA professionals teach alternative behaviors that serve the same function.
- Example: If a child screams for attention, they can be taught to ask for attention using a communication device or sign language.

#### C. Ethical Considerations

- Risk vs. Benefit Analysis: For severe behaviors (e.g., self-injury), descriptive assessments may be preferable over FA.
- Consent and Collaboration: Caregivers must understand the FA process before implementation.
- Minimizing Reinforcement of Problem Behavior: Modified approaches like trial-based FA or latency-based FA should be used when necessary.

**F.7. Interpret assessment data to determine the need for behavior-analytic services and/or referral to others.**

Interpreting Assessment Data to Determine the Need for Behavior-Analytic Services and/or Referral to Other Professionals

Interpreting assessment data is a critical step in Applied Behavior Analysis (ABA) to determine whether a client requires behavior-analytic services and/or a referral to other professionals. Proper interpretation ensures that clients receive the most appropriate interventions based on their needs, strengths, and areas of deficit. This process involves analyzing data from multiple sources, identifying patterns, and making data-driven decisions regarding service provision.

1. Collecting and Organizing Assessment Data

Before interpretation, ABA practitioners must ensure they have comprehensive and reliable assessment data. Common sources of assessment data include:

A. Direct Assessment Data

- Functional Behavior Assessment (FBA): Identifies environmental variables influencing behavior.
- Functional Analysis (FA): Confirms the function(s) of behavior through experimental manipulation.
- Skills Assessments: Measures functional communication, social, adaptive, and academic skills (e.g., VB-MAPP, ABLLS-R, AFLS, and PEAK).
- Baseline Data Collection: Documents frequency, duration, and intensity of behaviors before intervention.

B. Indirect Assessment Data

- Parent, Teacher, and Caregiver Interviews: Provides insights into behavior across different settings.
- Surveys and Questionnaires: Tools like the Vineland Adaptive Behavior Scales assess adaptive functioning.
- Review of Records: Includes IEPs, medical history, and prior therapy reports.

#### C. Observational Data

- ABC Data (Antecedent-Behavior-Consequence): Helps identify triggers and maintaining consequences.
- Scatterplots: Detects patterns related to time and environment.
- Latency and Duration Measurements: Assesses how quickly and for how long behaviors occur.

### 2. Analyzing Assessment Data to Determine the Need for ABA Services

Once data is collected, practitioners must analyze it systematically to determine if ABA therapy is warranted.

#### A. Criteria for Recommending Behavior-Analytic Services

ABA therapy is typically recommended when:

- The client exhibits challenging behaviors that interfere with learning, socialization, or daily living.
- There is a clear function of behavior identified through FBA/FA, indicating behavior can be modified through behavior-analytic interventions.
- The client demonstrates deficits in essential skills, such as communication, self-care, or social interaction.
- Current interventions (e.g., school-based supports, speech therapy) are insufficient in addressing behavioral concerns.

#### B. Matching Behavior to Function-Based Treatment

After determining the need for ABA, data must be used to create function-based intervention strategies.

- Escape-maintained behavior: Implement demand fading, differential reinforcement, and functional communication training (FCT).

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- Attention-maintained behavior: Reinforce appropriate attention-seeking behaviors while using planned ignoring for problem behaviors.
- Access to tangibles: Teach waiting skills and alternative communication strategies.
- Automatic reinforcement: Introduce replacement behaviors that provide similar sensory input.

### 3. Identifying the Need for Referral to Other Professionals

While ABA is effective for modifying behavior, some concerns may fall outside the scope of behavior-analytic services. In these cases, referrals to other professionals are necessary.

#### A. Common Reasons for Referral

Concern	Recommended Professional
Medical conditions affecting behavior (e.g., seizures, gastrointestinal issues, sleep disorders)	Physician, Neurologist, Gastroenterologist
Mental health concerns (e.g., anxiety, depression, trauma)	Psychologist, Psychiatrist, Counselor
Speech and language delays	Speech-Language Pathologist (SLP)
Motor skill deficits	Occupational Therapist (OT), Physical Therapist (PT)
Hearing or vision impairments	Audiologist, Ophthalmologist
Medication management	Psychiatrist, Developmental Pediatrician

#### B. Indicators That a Referral is Necessary

- Medical Concerns: If behavior appears linked to pain, illness, or medication side effects, a medical evaluation is needed.
- Severe Mental Health Symptoms: If the client exhibits extreme anxiety, self-harm, or signs of depression, they may need mental health support.
- Unexplained Developmental Delays: If a child shows signs of speech delays or motor impairments, a specialist should assess further.
- Ineffectiveness of ABA Interventions: If interventions are consistently ineffective despite proper implementation, a multidisciplinary approach may be required.

### C. Collaborative Approach to Referrals

- Clearly communicate why a referral is being made.
- Provide relevant assessment data to the referring professional.
- Maintain collaboration with other service providers to ensure a cohesive treatment plan.
- Obtain parent/caregiver consent before sharing assessment results with external professionals.

### F.8. Interpret assessment data to identify and prioritize socially significant, client-informed, and culturally responsive behavior-change procedures and goals

#### Interpreting Assessment Data to Identify and Prioritize Socially Significant, Client-Informed, and Culturally Responsive Behavior-Change Procedures and Goals in ABA

In Applied Behavior Analysis (ABA), the selection of behavior-change procedures and goals should be guided by assessment data that reflects social significance, client input, and cultural responsiveness. This ensures that interventions are meaningful, effective, and aligned with the values and needs of the client and their community. This process involves analyzing multiple sources of assessment data, determining priorities, and designing interventions that promote meaningful and lasting behavior change.

#### 1. Collecting and Analyzing Assessment Data

Before selecting goals, behavior analysts must analyze assessment data to determine the client's strengths, areas of need, and the environmental factors influencing behavior. Common assessment tools include:

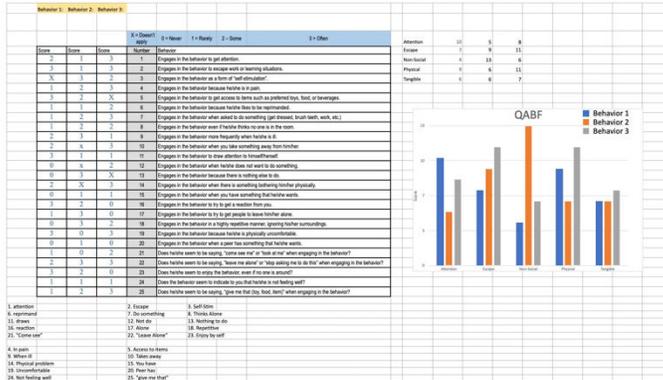
##### A. Direct Assessments

- Functional Behavior Assessment (FBA): Identifies antecedents and consequences maintaining challenging behavior.
- Functional Analysis (FA): Empirically determines the function of behavior through controlled manipulation of environmental variables.
- Skills-Based Assessments: Measures skill acquisition needs in language, socialization, and daily living:
  - Verbal Behavior Milestones Assessment and Placement Program (VB-MAPP)
  - Assessment of Basic Language and Learning Skills – Revised (ABLLS-R)

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- Promoting the Emergence of Advanced Knowledge (PEAK)
- Essential for Living (EFL)
- Adaptive Behavior Assessments (e.g., Vineland-3, AFLS)

## B. Indirect Assessments



- Parent/Caregiver and Client Interviews: Gather insights into client priorities, values, and daily challenges.
- Social Validity Measures: Ensure that goals are important and beneficial to the client and their family.
- Surveys and Questionnaires: Assess adaptive behavior, preferences, and environmental barriers.

## C. Observational Data

- ABC Data Collection (Antecedent-Behavior-Consequence): Identifies common triggers and maintaining consequences.
- Scatterplots and Frequency Data: Detects patterns in behavior across different contexts.
- Latency and Duration Measures: Determines the time elapsed before a behavior occurs or how long it persists.

## 2. Identifying and Prioritizing Socially Significant Goals

### A. What Makes a Goal Socially Significant?

Social significance refers to goals that improve the client’s quality of life, independence, and ability to participate in meaningful activities. To determine social significance, consider the following:

- Does the behavior interfere with daily living, learning, or social interactions?
- Does the skill promote greater independence and autonomy?
- Is the behavior of concern to caregivers, teachers, or the community?
- Will changing the behavior improve the client’s well-being and inclusion in society?

Examples of Socially Significant Goals:

Domain	Example of Socially Significant Goal
Communication	Teaching functional communication to replace tantrums
Social Skills	Increasing reciprocal play skills with peers
Self-Care	Developing independent toileting routines
Safety	Teaching how to respond to danger (e.g., stop at a crosswalk)
Daily Living	Learning to prepare a simple meal

#### B. Prioritizing Goals Based on Client Needs

Not all identified behaviors should be addressed simultaneously. Prioritization should be based on:

1. **Urgency:** Behaviors that pose safety risks (e.g., aggression, self-injury) require immediate intervention.
2. **Impact on Quality of Life:** Goals that enhance independence should be prioritized.
3. **Foundational Skills:** Skills that facilitate learning (e.g., attention to tasks, following directions) should come before complex goals.
4. **Caregiver and Client Input:** Clients and their families should have input in selecting the most relevant goals.
5. **Potential for Generalization:** Prioritize behaviors that will be useful across multiple settings.

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Prioritization Example:

Goal	Priority Level	Rationale
Reduce aggressive behavior	High	Poses a safety risk
Teach requesting using AAC	High	Essential for communication
Increase waiting tolerance	Medium	Supports transition management
Improve handwriting	Low	Academically useful but not urgent

### 3. Incorporating Client-Informed Goals

#### A. The Role of Client Preferences and Autonomy

ABA interventions should incorporate the client's voice in goal selection, ensuring that interventions align with their personal interests, choices, and future aspirations.

- For young children: Parent and caregiver input is critical, but child preferences should still be considered.
- For older children and adults: Clients should actively participate in setting their goals.
- For individuals with limited communication: Preference assessments and indirect assessments (e.g., observing engagement in activities) can guide goal selection.

Examples of Client-Informed Goals:

- If a client loves art, teaching requesting for art supplies instead of generic reinforcement.
- If a teenager wants more independence, prioritizing navigating public transportation over less impactful skills.

### 4. Ensuring Cultural Responsiveness in Behavior-Change Procedures

#### A. Why Cultural Responsiveness Matters

ABA interventions should be respectful of the client's cultural values, traditions, and community expectations. Failing to consider culture can result in interventions that are ineffective or even harmful.

#### B. Steps for Culturally Responsive Goal Selection

1. Engage in Open Dialogue: Discuss cultural values, expectations, and goals with the client and family.
2. Avoid Cultural Bias in Behavior Targets: Some behaviors considered problematic in one culture (e.g., avoiding eye contact) may be normative in another.
3. Use Reinforcers That Align with Cultural Preferences: Ensure that reinforcement strategies are meaningful to the client.
4. Incorporate Language and Social Norms in Training: Teach communication and social skills in ways that align with the client's social environment.

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Examples of Cultural Considerations in Goal Setting:

Cultural Consideration	Example of Culturally Responsive ABA Practice
Language Differences	Teaching communication in the home language first
Eye Contact Norms	Not requiring eye contact if it is culturally inappropriate
Social Interaction Expectations	Teaching greetings and social behaviors that align with the client's community

### 5. Evaluating and Adjusting Goals over Time

Once goals are selected, continuous data collection and evaluation ensure their effectiveness.

#### A. Monitoring Progress

- Use objective data tracking (e.g., frequency, duration, latency measures).
- Regularly update progress graphs and reports to determine success.
- Assess for generalization and maintenance across environments.

#### B. Modifying Goals as Needed

- If a goal is not achieving meaningful progress, it may need to be adjusted.
- If a client loses interest, goals may need to be re-evaluated for motivation.
- New goals should be introduced gradually to ensure continuous development.

### **Multiple Choice Quiz: Section F – Assessments (BACB 6th Edition Task List)**

Instructions:

Choose the best answer for each question.

#### **1. What is the primary purpose of conducting an assessment in ABA?**

A) To diagnose a disability

- B) To identify reinforcers for the client
- C) To determine the function of behavior and guide intervention
- D) To establish rapport with the client

**2. Which type of assessment involves direct observation and recording of behavior in the natural environment?**

- A) Indirect assessment
- B) Functional analysis
- C) Descriptive assessment
- D) Preference assessment

**3. Which of the following is NOT a type of indirect assessment?**

- A) Interviews
- B) Questionnaires
- C) Checklists
- D) ABC data collection

**4. In a functional analysis, what is the purpose of the control condition?**

- A) To reinforce all behaviors
- B) To remove antecedents and consequences related to the problem behavior
- C) To punish problem behavior
- D) To teach new replacement behaviors

**5. Which of the following is an example of an antecedent-based assessment method?**

- A) ABC recording
- B) Functional analysis
- C) Reinforcer assessment
- D) Indirect interview

**6. What does a functional analysis (FA) systematically manipulate?**

- A) The behavior of the client
- B) Antecedents and consequences

- C) The physical environment
- D) The data collection method

**7. Which of the following data collection methods records the immediate antecedents and consequences of a target behavior?**

- A) Functional analysis
- B) ABC recording
- C) Latency recording
- D) Task analysis

**8. What is the primary goal of a preference assessment?**

- A) To determine which reinforcers are most effective
- B) To identify the function of behavior
- C) To determine the severity of challenging behavior
- D) To create a behavior support plan

**9. Which type of preference assessment presents items one at a time to measure approach or selection behavior?**

- A) Multiple-stimulus without replacement (MSWO)
- B) Paired stimulus
- C) Single stimulus
- D) Free operant

**10. Which type of functional behavior assessment (FBA) provides the most conclusive evidence of behavioral function?**

- A) Indirect assessment
- B) Descriptive assessment
- C) Functional analysis
- D) Reinforcer assessment

**11. A scatterplot is most useful for identifying:**

- A) The function of a behavior

- B) The specific times when a behavior occurs most frequently
- C) The most reinforcing stimuli for a client
- D) The topography of a behavior

**12. Which is a major limitation of descriptive assessments?**

- A) They cannot identify environmental factors affecting behavior
- B) They rely solely on self-report data
- C) They do not establish a cause-and-effect relationship
- D) They require a long duration of data collection

**13. Which of the following is an example of a reinforcer assessment?**

- A) Conducting a paired-stimulus preference assessment
- B) Observing a client's natural environment
- C) Using a progressive-ratio schedule to determine how much effort the client will expend for a reinforcer
- D) Completing an interview with caregivers

**14. What is the main difference between a functional analysis and a descriptive assessment?**

- A) A functional analysis manipulates variables, whereas a descriptive assessment does not
- B) A descriptive assessment is more accurate than a functional analysis
- C) A functional analysis uses interviews, whereas a descriptive assessment uses experiments
- D) A descriptive assessment can identify function, whereas a functional analysis cannot

**15. Which assessment method is most useful for identifying skills a client has and needs to learn?**

- A) Functional analysis
- B) Curriculum-based assessment
- C) Descriptive assessment
- D) Scatterplot analysis

**16. Which is an example of an interview-based assessment tool?**

- A) Vineland Adaptive Behavior Scales

- B) Paired-stimulus preference assessment
- C) Reinforcer assessment
- D) Functional analysis

**17. What is a key feature of a multiple-stimulus without replacement (MSWO) preference assessment?**

- A) Items are removed after each selection
- B) The individual ranks items from least to most preferred
- C) The assessment is only conducted once
- D) The participant chooses only one item at a time

**18. Which assessment approach focuses on breaking complex skills into smaller components?**

- A) Curriculum-based assessment
- B) Reinforcer assessment
- C) Task analysis
- D) Scatterplot

**19. Which assessment method involves manipulating environmental conditions to confirm behavior function?**

- A) ABC recording
- B) Descriptive assessment
- C) Functional analysis
- D) Preference assessment

**20. What is the primary advantage of using a free-operant preference assessment?**

- A) It is the most accurate form of preference assessment
- B) It is less time-consuming than forced-choice assessments
- C) It always results in a clear reinforcer hierarchy
- D) It is the only method that identifies social reinforcers

## ASSIGNMENT

Applied Supervision Assignment Plan, revised to include one required video assignment per section of the BACB 6th Edition Task List. These video tasks are designed to demonstrate applied competence and support mastery through direct modeling or verbal explanation.

### **Section F: Behavior Assessment**

1. Indirect Assessment with Summary

Conduct a FAST or QABF with a caregiver and summarize results.

2. ABC Observation (Narrative & Structured)

Perform a structured and narrative ABC observation and analyze data.

3. Functional Hypothesis Statement

Synthesize assessment data into a clear behavior hypothesis.

4. Functional Interview Leadership

Lead or co-lead a functional assessment interview and summarize findings.

Video Assignment:

“Conducting a Functional Interview” – Record yourself conducting a mock or real (with consent) functional interview, demonstrating rapport, thoroughness, and professionalism.

### **Section F**

#### **Primary Books**

##### **(Foundational Sources)**

1. Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). Applied behavior analysis (3rd ed.). Pearson.

(Chapter 25: Functional Behavior Assessment, plus earlier chapters on behavior measurement and assessment strategies.)

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2. O'Neill, R. E., Albin, R. W., Storey, K., Horner, R. H., & Sprague, J. R. (2015). *Functional assessment and program development for problem behavior: A practical handbook* (3rd ed.). Cengage Learning.

(Classic manual for conducting FBAs — indirect, descriptive, and experimental assessments.)

3. Hanley, G. P., Iwata, B. A., & McCord, B. E. (2003). Functional analysis of problem behavior: A review. *Journal of Applied Behavior Analysis*, 36(2), 147–185. <https://doi.org/10.1901/jaba.2003.36-147>

(Landmark paper summarizing the procedures and variations of functional analysis.)

### Journal Articles

#### (Important Peer-Reviewed Foundations)

1. Iwata, B. A., Dorsey, M. F., Slifer, K. J., Bauman, K. E., & Richman, G. S. (1982/1994). Toward a functional analysis of self-injury. *Journal of Applied Behavior Analysis*, 27(2), 197–209. <https://doi.org/10.1901/jaba.1994.27-197>

(Original experimental functional analysis protocol.)

2. Carr, E. G. (1977). The motivation of self-injurious behavior: A review of some hypotheses. *Psychological Bulletin*, 84(4), 800–816. <https://doi.org/10.1037/0033-2909.84.4.800>

(Explores early functional thinking about challenging behavior.)

3. DeLeon, I. G., & Iwata, B. A. (1996). Evaluation of a multiple-stimulus presentation format for assessing reinforcer preferences. *Journal of Applied Behavior Analysis*, 29(4), 519–533. <https://doi.org/10.1901/jaba.1996.29-519>

(Introduces the Multiple Stimulus Without Replacement (MSWO) preference

assessment.)

4. Fisher, W., Piazza, C. C., Bowman, L. G., Hagopian, L. P., Owens, J. C., & Slevin, I. (1992). A comparison of two approaches for identifying reinforcers for persons with severe and profound disabilities. *Journal of Applied Behavior Analysis*, 25(2), 491–498. <https://doi.org/10.1901/jaba.1992.25-491>

(Comparison of choice assessments — important for F-5 and F-6 preference assessments.)

## **Webpages**

### **(Reputable, Official Sources)**

1. Behavior Analyst Certification Board (BACB). (2022). BCBA 6th Edition Task List and Content Outline.

<https://www.bacb.com/bcba-6th-edition-task-list/>

(Outlines expectations for assessment knowledge.)

2. Association for Behavior Analysis International (ABAI). (n.d.). About Behavior Analysis.

<https://www.abainternational.org/about-us/about-behavior-analysis.aspx>

(Mentions assessment as a key component of applied behavior analysis.)

3. Cambridge Center for Behavioral Studies. (n.d.). Behavior Analysis: A Brief Overview.

<https://behavior.org/behavior-analysis/>

(Reinforces the importance of assessing behavior before intervening.)

4. University of West Florida (UWF) ABA Program. (n.d.). Functional Behavior Assessment and Functional Analysis Resources.

(If accessible, this contains clear descriptions of indirect, descriptive, and experimental FBA procedures.)

## KEY DEFINITIONS SECTION F

### **Behavioral assessment**

A form of assessment that includes indirect and direct procedures such as interviews, checklists, and tests to identify and define the specific target behavior. In addition to identifying behavior(s) to change, comprehensive behavioral assessment can uncover functional relations between variables; it provides context on the resources, assets, significant others, competing contingencies, maintenance and generalization factors, and reinforcers (or punishers) that can be combined to improve the efficiency of an intervention.

### **Descriptive functional behavior assessment**

Direct observation of problem behavior and the antecedent and consequent events under naturally occurring conditions.

### **Functional analysis**

A term with two meanings in contemporary behavior analysis literature. In its original and most fundamental usage, functional analysis denotes demonstrations of functional relations between environmental variables and behavior. In the context of determining the purposes (functions) of problem behavior for an individual, functional analysis entails experimentally arranging antecedents and consequences representing those in the person's natural routines so that their separate effects on problem behavior can be observed and measured.

**Functional behavior assessment (FBA)**

A systematic method of assessment for obtaining information about the purposes (functions) a problem behavior serves for a person; results are used to guide the design of an intervention for decreasing the problem behavior and increasing appropriate behavior.

**Indirect functional assessment**

Structured interviews, checklists, rating scales, or questionnaires used to obtain information from people who are familiar with the person exhibiting the problem behavior (e.g., teachers, parents, caregivers, and/or the individual himself or herself); used to identify conditions or events in the natural environment that correlate with the problem behavior.

**Reinforcer assessment**

Refers to a variety of direct, empirical methods for presenting one or more stimuli contingent on a target response and measuring their effectiveness

**G. Behavior Change Procedures**

G.1. Design and evaluate positive and negative reinforcement procedures.
G.2. Design and evaluate differential reinforcement (e.g., DRA, DRO, DRL, DRH) procedures with and without extinction.
G.3. Design and evaluate time-based reinforcement (e.g., fixed time) schedules.
G.4. Identify procedures to establish and use conditioned reinforcers (e.g., token economies).
G.5. Incorporate motivating operations and discriminative stimuli into behavior-change procedures.
G.6. Design and evaluate procedures to produce simple and conditional discriminations.
G.7. Select and evaluate stimulus and response prompting procedures (e.g., errorless, most-to-least, least-to-most).
G.8. Design and implement procedures to fade stimulus and response prompts (e.g., prompt delay, stimulus fading).
G.9. Design and evaluate modeling procedures.
G.10. Design and evaluate instructions and rules.
G.11. Shape dimensions of behavior.
G.12. Select and implement chaining procedures.
G.13. Design and evaluate trial-based and free operant procedures.
G.14. Design and evaluate group contingencies.
G.15. Design and evaluate procedures to promote stimulus and response generalization.
G.16. Design and evaluate procedures to maintain desired behavior change following intervention (e.g., schedule thinning, transferring to naturally occurring reinforcers).
G.17. Design and evaluate positive and negative punishment (e.g., time-out, response cost, overcorrection).
G.18. Evaluate emotional and elicited effects of behavior change procedures. G.19. Design and evaluate procedures to promote emergent relations and generative performance.



**G.1. Design and evaluate positive and negative reinforcement procedures.**

Designing and Evaluating Positive and Negative Reinforcement Procedures in ABA Therapy

Reinforcement is a fundamental principle in Applied Behavior Analysis (ABA) used to increase the likelihood of desired behaviors. Both positive and negative reinforcement are essential for shaping behavior, promoting skill acquisition, and reducing problem behaviors by reinforcing alternative responses. Effective reinforcement procedures must be systematically designed, implemented, and evaluated to ensure they produce meaningful behavior change.

1. Understanding Positive and Negative Reinforcement

A. Positive Reinforcement

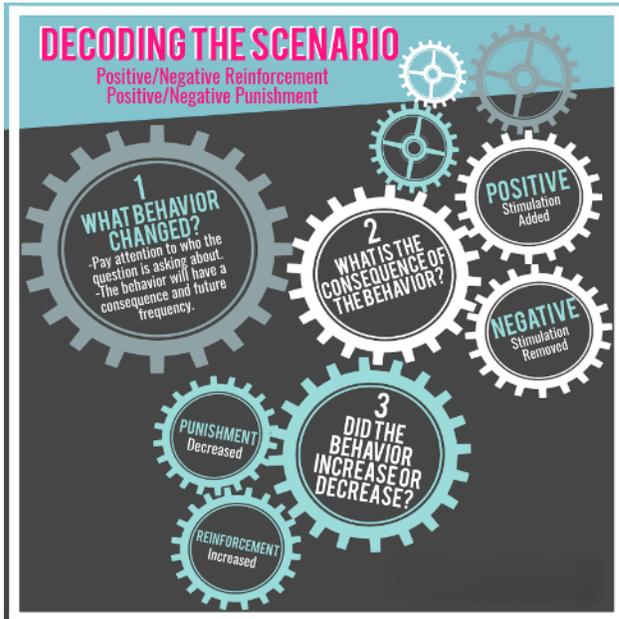
Positive reinforcement occurs when a stimulus is added immediately after a behavior, increasing the future likelihood of that behavior occurring in similar conditions.



Examples of Positive Reinforcement:

- A child receives a sticker after completing a math problem, increasing math completion.

- A client gets verbal praise for using functional communication, increasing their use of requests.
- A teenager earns extra screen time for following bedtime routines, increasing compliance.



## B. Negative Reinforcement

Negative reinforcement occurs when an aversive stimulus is removed after a behavior, increasing the likelihood of that behavior occurring in similar conditions.

Examples of Negative Reinforcement:

- A student asks for a break during a difficult task and is allowed to step away, increasing appropriate break requests.
- A client puts on headphones to reduce loud noises in a crowded room, increasing the use of self-advocacy tools.
- A worker completes an assignment early to avoid a deadline reminder, increasing early task completion.

Clarification:

Negative reinforcement is not punishment. It strengthens behavior by removing an aversive stimulus, while punishment reduces behavior.

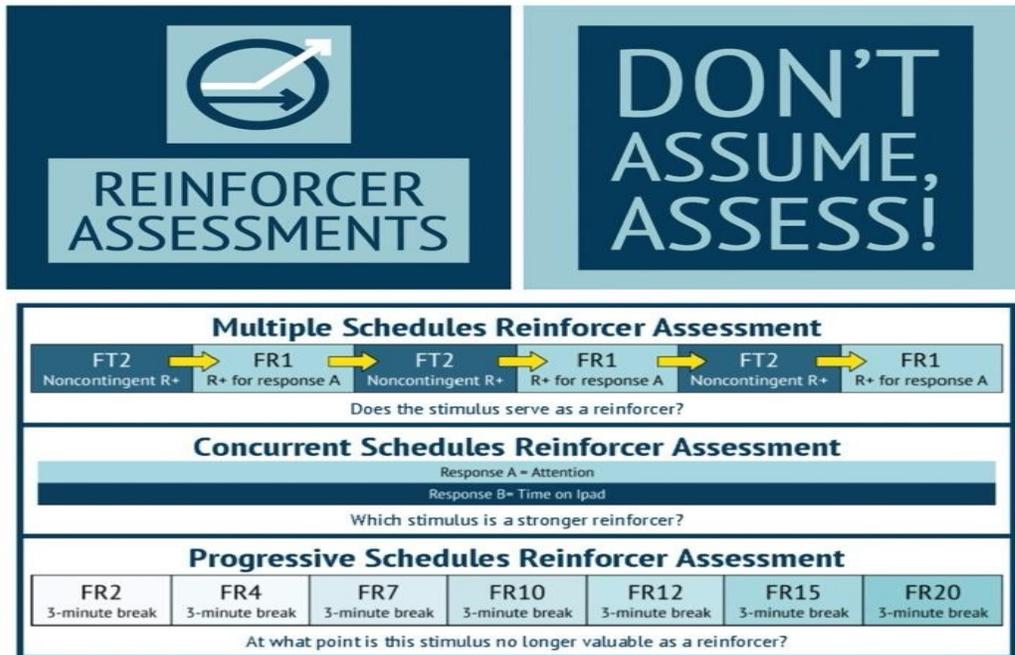
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### 2. Designing Effective Reinforcement Procedures

To ensure reinforcement procedures are effective, behavior analysts must systematically design and individualize reinforcement strategies.

Schedule	Description	Example
Continuous Reinforcement (CRF)	Reinforcement is provided after every instance of the behavior.	A child receives praise for every correct response during early skill learning.
Fixed Ratio (FR)	Reinforcement is given after a set number of responses.	A student earns a break after completing 5 math problems (FR-5).
Variable Ratio (VR)	Reinforcement is given after an average number of responses.	A client gets a reward after an average of 4 correct responses (VR-4).
Fixed Interval (FI)	Reinforcement is provided after a set time has passed.	A worker gets paid every two weeks (FI-14 days).
Variable Interval (VI)	Reinforcement is given after an unpredictable time period.	A student receives teacher praise approximately every 10 minutes (VI-10).

## A. Conducting a Reinforcer Assessment



Before implementing reinforcement procedures, ABA practitioners must identify effective reinforcers using methods such as:

- Preference Assessments:
  - Free-Operant Preference Assessment
  - Paired-Stimulus Preference Assessment
  - Multiple-Stimulus without Replacement (MSWO)
  - Reinforcer Sampling: Expose the client to various stimuli and observe engagement levels.
- Caregiver and Client Interviews: Gather information about potential reinforcers.

## B. Selecting the Type of Reinforcement Schedule

Reinforcement schedules determine how often reinforcement is delivered and impact the rate and strength of behavior acquisition.

- Use Continuous Reinforcement for teaching new skills.
- Transition to Variable Schedules to maintain and generalize behavior.
- Use Thinning Procedures to fade reinforcement over time while maintaining effectiveness.

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### C. Structuring Effective Reinforcement Delivery

- Ensure reinforcement is immediate → Deliver reinforcement immediately after the behavior to strengthen the contingency.
- Pair reinforcement with social praise → Helps transition clients to natural reinforcement.
- Use differential reinforcement → Reinforce the most appropriate behaviors while withholding reinforcement for problem behaviors (e.g., Differential Reinforcement of Alternative Behavior [DRA]).

### 3. Evaluating Reinforcement Procedures

Effective reinforcement programs must be continuously monitored and adjusted based on data.

#### A. Data Collection for Reinforcement Effectiveness

ABA professionals must collect objective data to determine whether the reinforcement procedure is increasing the target behavior.

Measurement System	What It Measures	Example
Frequency	Number of times behavior occurs.	Client uses a functional request 10 times per session.
Duration	Length of time behavior lasts.	Client remains seated for 5 minutes with reinforcement.
Latency	Time between stimulus and behavior.	Time taken to begin a task after instruction.
Rate	Responses per unit of time.	3 correct responses per minute.

#### B. Signs That Reinforcement Procedures Need Adjustments

- Behavior does not increase → the reinforcer may not be motivating.

- Client loses interest in the reinforcer → rotate reinforcers to prevent satiation.
- Behavior occurs only when reinforcement is available → Ensure generalization by fading reinforcement gradually.
- Behavior dependency develops → Overuse of reinforcement without thinning schedules can create dependency.

#### C. Ethical Considerations in Reinforcement Use

- Avoid overuse of edibles or excessive tangible reinforcers → Transition toward natural reinforcement (e.g., social praise, intrinsic motivation).
- Ensure reinforcement is age-appropriate and culturally respectful → Reinforcement should be individualized and align with family values.
- Monitor for unintended reinforcement of problem behavior → Ensure that reinforcement is only provided for desired behaviors.

#### 4. Case Examples of Reinforcement Procedures in ABA

##### Case Study 1: Implementing Positive Reinforcement in Communication

Background: A nonverbal child engages in tantrums when they want a preferred toy.

Assessment Data: The behavior is maintained by access to tangibles.

Intervention:

- Teach functional communication using PECS (Picture Exchange Communication System).
- Implement positive reinforcement (providing access to toys) only when the client uses PECS.
- Phase out continuous reinforcement by switching to an FR-3 schedule after the skill is established.

Outcome: The child reduces tantrums and increases communication using PECS.

##### Case Study 2: Using Negative Reinforcement to Teach Compliance

Background: A child frequently throws materials when presented with difficult tasks.

Assessment Data: The behavior is escape-maintained (negative reinforcement).

Intervention:

- Teach functional communication for breaks (e.g., “Can I have a break?”).
- Implement negative reinforcement by allowing a break only when the child appropriately requests one.
- Gradually increase work expectations before allowing breaks (demand fading).

Outcome: The child learns to ask for a break appropriately, reducing task avoidance behaviors.

**G.2. Design and evaluate differential reinforcement (e.g., DRA, DRO, DRL, DRH) procedures with and without extinction.**

Designing and Evaluating Differential Reinforcement Procedures (DRA, DRO, DRL, DRH) with and without Extinction in ABA Therapy

Differential reinforcement is a core Applied Behavior Analysis (ABA) strategy used to increase desired behaviors while reducing problem behaviors by selectively reinforcing specific responses. It is an evidence-based alternative to punishment-based interventions and is widely applied across various settings. When combined with or without extinction procedures, differential reinforcement can effectively shape behavior over time.

1. Understanding Differential Reinforcement

A. What is Differential Reinforcement?

Differential reinforcement reinforces one set of behaviors while withholding reinforcement for another. The goal is to teach appropriate alternatives to problem behaviors or shape behavior toward desired outcomes.

There are four main types of differential reinforcement strategies:

Type	Definition	Example
DRA – Differential Reinforcement of Alternative Behavior	Reinforcing an appropriate replacement behavior while withholding reinforcement for the problem behavior.	A student receives praise for raising their hand instead of calling out.
DRO – Differential Reinforcement of Other Behavior	Reinforcing the absence of the problem behavior within a specific time interval.	A client receives a token every 5 minutes without aggression.
DRL – Differential Reinforcement of Low Rates of Behavior	Reinforcing lower frequencies of a behavior when complete elimination is unnecessary.	A child is rewarded for reducing the number of times they ask for help from 10 to 3 times per session.
DRH – Differential Reinforcement of High Rates of Behavior	Reinforcing higher frequencies of a desired behavior.	A student receives extra recess time for completing 10 math problems instead of 5.

## 2. Designing Differential Reinforcement Procedures

When designing a differential reinforcement intervention, the following systematic steps should be followed:

### A. Conduct a Functional Behavior Assessment (FBA)

- Identify why the problem behavior occurs (i.e., the function: escape, attention, tangible, automatic).
- Collect baseline data on the frequency and intensity of behavior.
- Select an appropriate reinforcement strategy that aligns with the function.

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### B. Select an Appropriate Type of Differential Reinforcement

- Use DRA when a clear, functionally equivalent alternative behavior can be taught.
- Use DRO when completely eliminating a behavior is the goal.
- Use DRL when the behavior is acceptable at low rates (e.g., frequent questioning in class).
- Use DRH when increasing a desired skill is the objective (e.g., social initiations).

### C. Determine Reinforcement Criteria

- Establish a reinforcement schedule (e.g., fixed interval, variable interval, ratio-based).
- Use highly motivating reinforcers (identified via preference assessments).
- Ensure reinforcement is contingent on the target behavior.

### D. Decide Whether to Include Extinction

- With Extinction: Reinforcement is removed only for the problem behavior while reinforcing alternatives.
- Example: A student calls out for attention → teacher ignores the call-out → teacher reinforces hand-raising.
- Without Extinction: Reinforcement is provided for desired behavior without completely withholding it for problem behavior.
- Example: A child who screams to escape work gets frequent breaks for using a break card but is still allowed to escape occasionally.

## 3. Implementing and Evaluating Each Differential Reinforcement Procedure (Continued)

### A. Differential Reinforcement of Alternative Behavior (DRA)

- Goal: Teach a functionally equivalent replacement behavior while reducing the problem behavior.
- Key Strategy: Reinforce the alternative behavior while withholding reinforcement for the problem behavior (with extinction) or reinforcing both at different levels (without extinction).

Example of DRA Implementation:

Behavior Function	Problem Behavior	Alternative Behavior (Reinforced)	Reinforcement Used
Attention-Seeking	Child yells for attention	Child raises hand	Teacher provides praise and attention
Escape	Student runs away from task	Student requests a break	Allowed to take a 1-minute break
Tangibles	Child grabs another child's toy	Child requests toy using PECS	Child is given access to the toy
Automatic Reinforcement	Child engages in hand-flapping	Child engages with a fidget toy	Fidget toy access is reinforced

Evaluation of DRA Effectiveness:

- Measure frequency of problem vs. alternative behavior → Does the child use the alternative behavior more over time?
- Use visual analysis (graphs, trend lines) → is the problem behavior decreasing?
- Adjust reinforcement delivery → if the alternative behavior is not increasing, is reinforcement motivating enough?

B. Differential Reinforcement of Other Behavior (DRO)

- Goal: Reinforce any behavior except the problem behavior within a specific time frame.
- Key Strategy: Set intervals where reinforcement is delivered only if the problem behavior does not occur.

Example of DRO Implementation:

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Behavior Function	Problem Behavior	Reinforcement Schedule	Reinforcement Used
Attention-Seeking	Child screams in class	If no screaming occurs for 5 minutes, reinforce	Teacher gives a token
Escape	Student throws materials	If the student stays seated for 10 minutes, reinforce	Student gets a short break
Tangibles	Child demands snacks by crying	If the child does not cry for 15 minutes, reinforce	Child is given a snack
Automatic Reinforcement	Child bangs head against the wall	If no head banging occurs for 1 hour, reinforce	Preferred sensory activity provided

Evaluation of DRO Effectiveness:

- Track problem behavior frequency → Are the intervals increasing over time?
- Adjust reinforcement intervals → gradually increase the time period without the behavior before reinforcement is given.
- Monitor generalization → Ensure behavior remains low in different settings.

C. Differential Reinforcement of Low Rates of Behavior (DRL)

- Goal: Reduce (but not eliminate) behavior that is acceptable at lower levels.
- Key Strategy: Reinforce behavior only when it occurs below a specified rate.

Example of DRL Implementation:

Behavior Function	Behavior to Reduce (Not Eliminate)	Reinforcement Criteria	Reinforcement Used
Attention-Seeking	Student asks too many questions	Reinforce when questions drop from 10 to 3 per lesson	Verbal praise and points
Escape	Student frequently requests bathroom breaks	Reinforce when requests drop from 5 to 2 per hour	Teacher allows preferred activity
Tangibles	Child asks for candy repeatedly	Reinforce only first 2 requests per meal	Child receives small candy after meal
Automatic Reinforcement	Child rocks back and forth continuously	Reinforce when rocking occurs for less than 3 minutes per hour	Child gets access to sensory-friendly seating

Evaluation of DRL Effectiveness:

- Track response rate → is the behavior gradually decreasing while still occurring at appropriate levels?
- Ensure reinforcement is meaningful → If the behavior does not decrease, try increasing the reinforcer value.

D. Differential Reinforcement of High Rates of Behavior (DRH)

- Goal: Increase the occurrence of a desirable behavior.
- Key Strategy: Reinforce behavior only if it occurs more frequently than a set baseline rate.

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Example of DRH Implementation:

Desired Behavior	Baseline Rate	Reinforcement Criteria	Reinforcement Used
Social interactions	Child initiates social play once per hour	Reinforce when child initiates play 3 times per hour	Extra playtime or special toy
Task completion	Student completes 2 math problems per session	Reinforce when student completes 5 problems	Access to a preferred game
Exercise participation	Client engages in movement activities for 5 minutes	Reinforce when activity reaches 15 minutes	Special privilege earned
Verbal communication	Child uses 3 words per sentence	Reinforce when sentences are 5+ words long	Verbal praise and sticker chart

Evaluation of DRH Effectiveness:

- Compare baseline data to progress → are response rates increasing toward the goal?
- Adjust reinforcement levels → if the behavior plateaus, increase reinforcer value or modify schedule.

4. Differential Reinforcement With vs. Without Extinction

Factor	With Extinction	Without Extinction
Definition	Reinforcement is given for alternative behaviors while reinforcement for the problem behavior is removed.	Reinforcement is provided for alternative behaviors, but the problem behavior is not necessarily ignored.
Example	A child receives praise for using words, but tantrums are ignored (DRA + Extinction).	A child receives praise for using words, but tantrums still occasionally lead to reinforcement.
Effectiveness	More effective in reducing behavior but may lead to extinction bursts.	Less disruptive but slower reduction in problem behavior.
Considerations	Extinction must be used consistently to be effective.	Useful when complete extinction is not possible or ethical.

**G.3. Design and evaluate time-based reinforcement (e.g., fixed time) schedules.**

Designing and Evaluating Time-Based Reinforcement (e.g., Fixed-Time) Schedules in ABA Therapy

1. Understanding Time-Based Reinforcement Schedules

Time-based reinforcement schedules involve delivering reinforcement at predetermined time intervals, regardless of behavior. Unlike reinforcement contingent on behavior (e.g., Differential Reinforcement procedures), time-based schedules provide reinforcement independent of the client's actions. These schedules are often used to reduce problem behaviors by breaking the contingency between behavior and reinforcement, helping to decrease motivation for maladaptive behaviors while promoting more appropriate responding.

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### A. Types of Time-Based Schedules

Schedule Type	Definition	Example
Fixed-Time (FT) Schedule	Reinforcement is provided at a consistent, pre-set interval (e.g., every 5 minutes), regardless of behavior.	A student receives a sticker every 10 minutes of class time, regardless of participation.
Variable-Time (VT) Schedule	Reinforcement is delivered at unpredictable intervals based on an average time frame.	A child receives verbal praise on average every 7 minutes, but actual delivery varies (e.g., 5, 10, 8 minutes).

### 2. Designing Time-Based Reinforcement Schedules

When implementing a time-based reinforcement schedule, behavior analysts must tailor the schedule to meet the client's individual needs while ensuring reinforcement delivery remains effective.

#### A. Steps for Designing a Time-Based Schedule

1. Conduct a Functional Behavior Assessment (FBA)
  - Identify problem behavior functions to determine if time-based reinforcement is an appropriate intervention.
  - Typically used for escape-maintained, attention-maintained, or tangible-maintained behaviors.
2. Select the Reinforcement Type
  - Reinforcement should be highly motivating and identified through preference assessments.
  - Examples:
  - For attention-maintained behavior, provide non-contingent attention (e.g., regular praise).

- For escape-maintained behavior, provide breaks at set intervals rather than after problem behavior.
3. Determine an Appropriate Time Interval
    - Baseline data analysis helps establish an effective interval:
    - If the problem behavior occurs every 3 minutes, start reinforcement at 2.5-minute intervals and gradually increase.
    - Fixed-Time (FT) schedules should start at a high frequency and gradually fade to promote independence.
  4. Implement Reinforcement Delivery
    - FT Schedule Example: Provide reinforcement every 5 minutes, regardless of behavior.
    - VT Schedule Example: Reinforcement is delivered randomly every 3 to 7 minutes, preventing predictability.

### 3. Evaluating the Effectiveness of Time-Based Schedules

To determine whether a time-based reinforcement schedule is effective, ABA practitioners must collect objective data and monitor behavioral trends.

#### A. Data Collection for Evaluation

Metric	What It Measures	Example
Frequency of Problem Behavior	Is the problem behavior decreasing over time?	A child engages in fewer aggression episodes when reinforcement is provided every 5 minutes.
Latency to Problem Behavior	Is reinforcement delaying or preventing the behavior?	A student who previously escaped tasks every 3 minutes now waits 7 minutes before attempting to escape.
Engagement in Desired Behaviors	Is reinforcement increasing appropriate behaviors?	A client receives attention non-contingently, leading to increased independent play.

B. Signs of Success

- Decrease in problem behavior → the child engages in fewer escape attempts.
- Stable or increased engagement in appropriate behaviors → the student remains seated longer.
- Reinforcement fading is effective → the interval between reinforcement increases without behavior worsening.

C. Adjustments If Ineffective

- Problem behavior persists? → Reduce the time interval for reinforcement.
- Reinforcer loses effectiveness? → Conduct a new preference assessment.
- No improvement? → Consider adding a contingent reinforcement component (e.g., reinforcing appropriate behaviors alongside time-based reinforcement).

4. Advantages and Limitations of Time-Based Reinforcement

A. Advantages

- ✓ Reduces Problem Behavior Without Direct Contingency – Breaks the reinforcement-behavior cycle.
- ✓ Works Well for Escape and Attention-Maintained Behavior – Prevents reinforcement of problem behavior.
- ✓ Easy to Implement in Natural Settings – Can be used in classrooms and home environments.

B. Limitations

- △ Does Not Teach Replacement Behaviors – Should be paired with DRA or FCT to encourage functional skills.
- △ May Reinforce Inappropriate Behaviors – If mistimed, reinforcement could accidentally coincide with problem behavior.

△ Requires Careful Fading – If reinforcement is removed too quickly, behavior may resurge (extinction burst).

#### G.4. Identify procedures to establish and use conditioned reinforcers (e.g., token economies).



#### Identifying Procedures to Establish and Use Conditioned Reinforcers (e.g., Token Economies) in ABA

In Applied Behavior Analysis (ABA), conditioned reinforcers are stimuli that acquire reinforcing properties through association with primary or other established reinforcers. One of the most effective systems using conditioned reinforcers is a token economy, which systematically delivers tokens as conditioned reinforcers that can later be exchanged for backup reinforcers. Below are the key procedures to establish and use conditioned reinforcers effectively.

##### 1. Establishing Conditioned Reinforcers

Conditioned reinforcers must first be paired with existing reinforcers to develop their reinforcing value. The following steps outline this process:

##### a. Identify Effective Backup Reinforcers

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- Conduct a preference assessment to determine items or activities that function as reinforcers.

- Choose a variety of backup reinforcers to maintain motivation and avoid satiation.

### b. Pairing the Neutral Stimulus with Primary Reinforcers

- Present the neutral stimulus (e.g., tokens, points, stickers) immediately before or simultaneously with the primary reinforcer (e.g., food, praise, access to a preferred activity).

- Repeat pairing consistently across multiple trials to build an association.

### c. Monitor for Effectiveness

- Observe whether the individual starts responding to the conditioned reinforcer even in the absence of the primary reinforcer (i.e., it now functions independently as a reinforcer).

- If the neutral stimulus does not maintain reinforcing properties, re-pair it with the backup reinforcer more frequently.

## 2. Implementing a Token Economy System

A token economy is one of the most widely used applications of conditioned reinforcement. It involves delivering tokens contingent on target behaviors and allowing individuals to exchange them for backup reinforcers.

### a. Define Target Behaviors

- Clearly specify which behaviors will earn tokens.

- Ensure behaviors are measurable and achievable for the individual.

### b. Select an Appropriate Token

- Choose a tangible token that is easily identifiable and portable (e.g., poker chips, stickers, points on a chart).

- Ensure the token itself does not have inherent reinforcing value—it should only be effective when exchangeable for backup reinforcers.

### c. Establish the Token Exchange System

- Determine the schedule of reinforcement (e.g., continuous or intermittent delivery of tokens).

- Set an exchange ratio (e.g., “5 tokens = 1 reinforcer”) that is achievable but not too easy.

- Create a menu of backup reinforcers with different token values to maintain motivation.

d. Reinforce Consistently

- Deliver tokens immediately after the target behavior occurs.
- Pair token delivery with social reinforcement (e.g., praise) to enhance its effectiveness.
- Ensure the token system remains motivating by periodically adjusting reinforcement schedules and backup reinforcer options.

3. Generalization and Maintenance of Conditioned Reinforcers

To ensure conditioned reinforcers continue to function effectively:

a. Vary the Backup Reinforcers

- Rotate or introduce new reinforcers to prevent satiation.

b. Fade the Token System Over Time

- Gradually increase the response requirement for tokens (e.g., requiring more responses per token).
- Transition from extrinsic reinforcers (tokens) to intrinsic reinforcement (natural consequences like praise, privileges).

c. Promote Generalization

- Use tokens in multiple settings (e.g., home, school, community).
- Reinforce behaviors with natural conditioned reinforcers (e.g., social praise, access to preferred activities) instead of tokens alone.

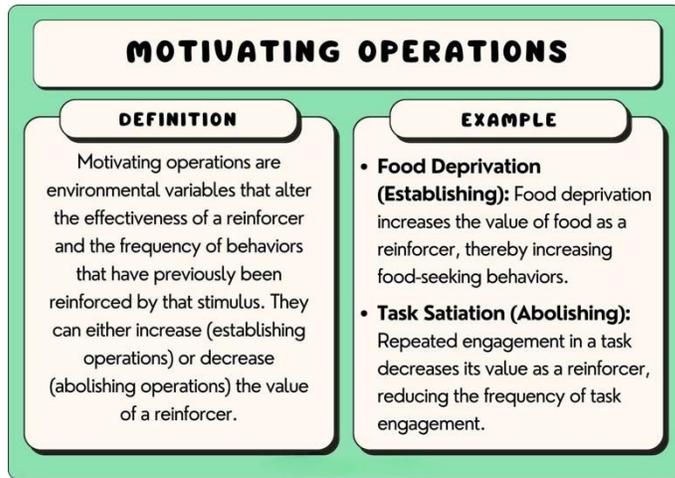
**G.5. Incorporate motivating operations and discriminative stimuli into behavior-change procedures.**

Incorporating Motivating Operations and Discriminative Stimuli into Behavior-Change Procedures in ABA

In Applied Behavior Analysis (ABA), two fundamental concepts that influence behavior are Motivating Operations (MOs) and Discriminative Stimuli (SDs). These elements help shape

behavior by modifying reinforcement effectiveness and signaling when reinforcement is available. Understanding and incorporating these principles into behavior-change procedures can enhance learning, increase desirable behaviors, and reduce problematic ones.

### 1. Understanding Motivating Operations (MOs)



#### Definition of Motivating Operations

A Motivating Operation (MO) is an environmental variable that alters:

1. The value of a reinforcer or punisher (reinforcer effectiveness).
2. The current frequency of behaviors associated with obtaining reinforcement.

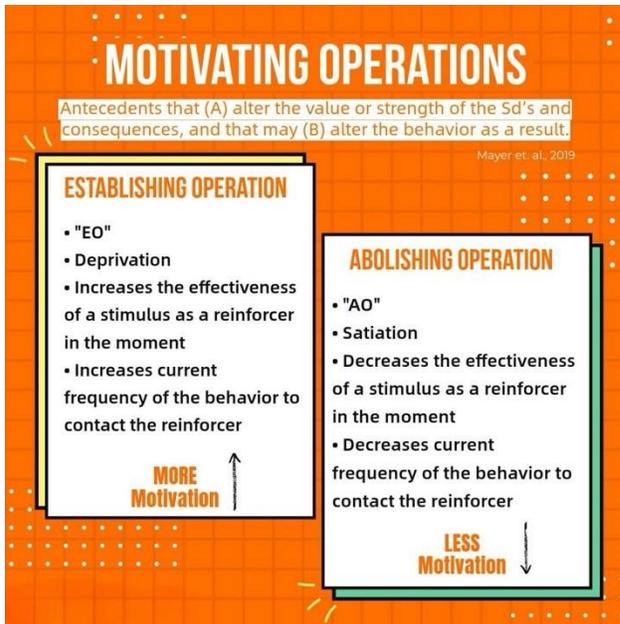
There are two types of MOs:

#### a. Establishing Operations (EOs)

- Increase the effectiveness of a reinforcer and the frequency of behaviors that lead to it.
- Example: A child who has not eaten for hours is more likely to engage in behaviors (e.g., asking for food, complying with instructions) to access food, making food a more powerful reinforcer.

#### b. Abolishing Operations (AOs)

- Decrease the effectiveness of a reinforcer and the likelihood of behaviors aimed at obtaining it.
- Example: If a child has just finished eating a large meal, food becomes a less effective reinforcer, and behaviors to obtain food decrease.



### Incorporating MOs into Behavior-Change Procedures

- Enhance motivation for learning: Use EOs by temporarily restricting access to reinforcers before instructional sessions (e.g., limiting screen time so access to a tablet is more reinforcing for completing tasks).
- Reduce problem behaviors: Introduce AOs to decrease motivation for behaviors maintained by specific reinforcers (e.g., satiation of attention before situations where problem behaviors occur to gain attention).
- Increase response effort gradually: Modify MOs to systematically increase the response effort required for reinforcement, promoting persistence in skill-building.

### 2. Understanding Discriminative Stimuli (SDs)

#### Definition of Discriminative Stimuli

A Discriminative Stimulus (SD) is a cue or signal that indicates reinforcement is available contingent on a specific behavior. SDs help individuals discriminate when certain behaviors will be reinforced.

- Example of an SD in Learning: A teacher presents a flashcard with the letter “A” and asks, “What letter is this?” If saying “A” results in praise and a sticker, the flashcard functions as an SD signaling that reinforcement is available for the correct response.
- Example of an SD in Daily Life: A “Walk” signal at a crosswalk indicates that pressing the button and crossing the street will result in safe passage (reinforcement of reaching the other side).

Incorporating SDs into Behavior-Change Procedures

**STIMULUS FADING**  
Systematic and gradual removal of prompts until intended SD evokes responding.

car	2+2=4	pink
car	2+2=	pink
car	2+2=	pink

**LEAST TO MOST**  
Prompting strategy which starts with a prompt that has the least intrusive properties which increase until correct responding occurs

**MOST TO LEAST**  
Prompting strategy which starts with a prompt that has the most intrusive properties which decrease as correct responding occurs

**GRADUATED GUIDANCE**  
Instructor shadows the student's movements, providing prompts when needed, and gradually increasing the distance between instructor's shadow and the student.

**DELAYED PROMPTING**  
A time delay between the intended SD and the prompt.

**CONSTANT TIME DELAY**  
Time delay remains constant until responding occurs prior to prompt.

**PROGRESSIVE TIME DELAY**  
Time delay gradually increases until responding occurs prior to prompt.

- Prompting and fading: Use SDs to guide behavior and systematically fade prompts to promote independent responding (e.g., pointing to a task to prompt completion, then gradually removing the prompt).

**PROMPTS**  
Stimulus vs. Response  
SD "TURN ON THE TV"

**CAN IT BE FADED?**  
Prompts are meant to be faded

**MODEL PROMPT**  
Demonstrating the correct response

**PHYSICAL GUIDANCE**  
Physically guiding movement to help learner engage in the correct response.

**VERBAL INSTRUCTIONS**  
Vocal, written words, pictures, or signs  
Make the correct response more obvious

**RESPONSE PROMPTS**  
"Prompts are supplementary antecedent stimuli used to occasion a correct response in the presence of an SD that will eventually control the behavior." (Cooper, 2012, p. 401)

**MOVEMENT PROMPT**  
Tapping, pointing to, looking at the correct stimuli.

**POSITION PROMPT**  
Place correct stimuli closer

**REDUNDANCY PROMPT**  
Pairing a color, size or shape with correct stimuli

**STIMULUS PROMPTS**  
Make the correct stimuli more obvious

- Errorless learning: Provide SDs in a structured way to ensure correct responses and reinforce success (e.g., using visual cues or verbal models before expecting an independent response).
- Generalization training: Present SDs across multiple environments to ensure behaviors occur outside of structured settings (e.g., teaching a child to follow verbal instructions from parents, teachers, and peers).

### 3. Combining Motivating Operations and Discriminative Stimuli in Behavior-Change Procedures

#### a. Using MOs to Enhance the Effectiveness of SDs

- When motivation is high (EO present), an SD is more likely to evoke the target behavior.
- Example: If a child is thirsty (EO for water present), the sight of a water bottle (SD) is more likely to evoke the response of asking for water.

#### b. Using SDs to Teach Functional Communication (FCT)

- Pair SDs with communication opportunities when motivation is high.
- Example: If a child is highly motivated to access a toy, the presence of a communication card (SD) signals that requesting the toy using the card will result in reinforcement.

#### c. Reducing Problem Behavior Using MOs and SDs

- Modify MOs to reduce motivation for problem behavior: If a student engages in disruptive behavior to gain teacher attention, providing noncontingent reinforcement (NCR) (frequent attention throughout the day) serves as an AO, making problem behavior less likely.
- Use SDs to teach replacement behaviors: Teach a child to raise their hand (SD present) to request attention instead of engaging in disruptive behaviors.

### 4. Practical Applications in ABA Programs

#### a. Teaching New Skills

- Manipulate MOs: Restrict access to a preferred item to increase motivation for requesting it.
- Use SDs: Show a picture of the item as an SD to signal the opportunity to request it.

#### b. Increasing Compliance

- Use EOs strategically: Provide reinforcement only after compliance, making it more valuable.
- Use SDs consistently: Present clear instructions and reinforcement cues.

#### c. Behavior Reduction

- Reduce EO for problem behaviors: Provide frequent breaks to prevent escape-maintained behaviors.

- Teach SD-based replacement behaviors: Train alternative behaviors that serve the same function as problem behaviors.

## **G.6. Design and evaluate procedures to produce simple and conditional discriminations.**

### Designing and Evaluating Procedures to Produce Simple and Conditional Discriminations in ABA

#### Introduction

Discrimination training is a fundamental component of Applied Behavior Analysis (ABA), used to teach individuals to respond differently to stimuli based on specific conditions. This can be categorized into simple discriminations and conditional discriminations. Designing and evaluating effective procedures for these forms of learning is crucial for skill acquisition and generalization.

#### 1. Understanding Simple and Conditional Discriminations

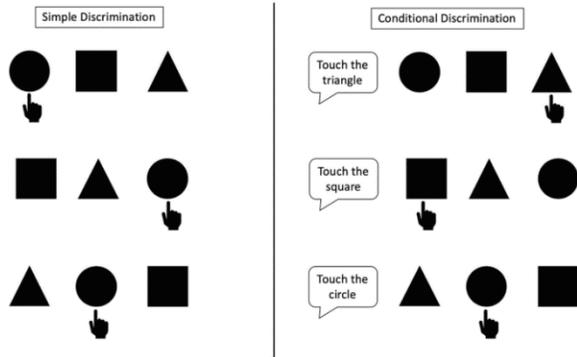
##### Simple Discrimination

A simple discrimination occurs when a behavior is reinforced in the presence of a particular stimulus (the discriminative stimulus, SD) and not reinforced in its absence or in the presence of another stimulus (S $\Delta$ , or stimulus delta).

- Example: A child is taught to touch a picture of a dog when presented with an array of three pictures (dog, cat, and bird). The behavior of touching the dog is reinforced, while touching the cat or bird is not.

##### Conditional Discrimination

A conditional discrimination occurs when reinforcement of a response depends on additional contextual cues. That is, the correct response depends on the relationship between multiple stimuli.



- Example: A student is taught to select the correct shape based on a verbal instruction. When the teacher says, “Point to the square,” the correct response is different than when the teacher says, “Point to the triangle.”

## 2. Designing Procedures for Simple and Conditional Discriminations

### A. Procedures for Teaching Simple Discriminations

1. Identify the SD and SA
  - The SD signals that a specific response will be reinforced.
  - The SA signals that reinforcement will not be provided for a response.
2. Use Prompting Strategies
  - Most-to-least prompting: Provide full prompts initially and gradually fade them.
  - Least-to-most prompting: Allow for independent responses before introducing prompts.
  - Time-delay procedures: Introduce a delay between the SD and prompt to encourage independent responding.
3. Reinforce Correct Responses
  - Deliver reinforcement immediately following correct responses to strengthen discrimination.
4. Use Error Correction Strategies
  - If the learner selects SA, implement an immediate correction procedure (e.g., model the correct response and allow retry).
5. Expand Discrimination Training

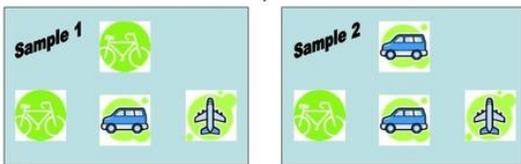
- Introduce additional exemplars to ensure generalization (e.g., different images of dogs if teaching the concept of “dog”).

#### B. Procedures for Teaching Conditional Discriminations

1. Introduce Multiple Stimuli with Varying Contexts
  - Ensure the learner understands that the correct response changes depending on an additional cue.
2. Use Matching-to-Sample Procedures
  - Simultaneous matching-to-sample: The comparison stimuli are presented along with the sample stimulus.
  - Delayed matching-to-sample: The sample stimulus is removed before the learner makes a choice.

### Matching-to-Sample

- Conditional discrimination training
  - Same selection must be correct with one conditional stimulus, but incorrect with one or more other sample stimuli



3. Vary Instructional Conditions
  - Teach that the correct response depends on the relationship between stimuli (e.g., choosing “red” when shown the word “red” but choosing “blue” when shown the word “blue”).
4. Use Differential Reinforcement
  - Reinforce responses only when they match the specific conditional cue.
5. Implement Error Correction
  - If the learner selects the incorrect response, use error correction strategies, such as modeling the correct response or providing a guided trial.
6. Train across Multiple Settings and Stimuli
  - Incorporate different locations, materials, and people to promote generalization.

### 3. Evaluating the Effectiveness of Discrimination Training

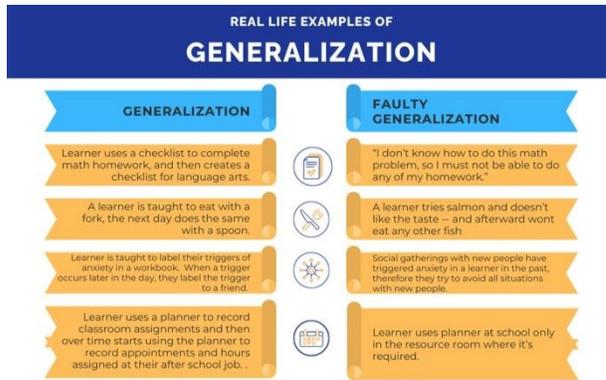
To ensure that the procedures are effective, continuous data collection and analysis should be conducted. Below are key evaluation strategies:

#### A. Data Collection Methods

1. Trial-by-Trial Data Collection
  - Record each response as correct, incorrect, or prompted to measure progress over time.
2. Percent Correct Measurement
  - Calculate the percentage of correct responses during sessions.
3. Latency and Fluency Data
  - Measure the time taken to respond to the SD and whether responses become more fluent over time.
4. Error Analysis
  - Identify patterns in errors (e.g., consistent confusion between two stimuli) to refine teaching strategies.

#### B. Methods for Assessing Mastery and Generalization

1. Mastery Criteria
  - Typically, mastery is achieved when a learner demonstrates 80-100% accuracy across multiple sessions with different instructors and environments.
2. Generalization Probes
  - Test the learner's ability to discriminate across new, untrained stimuli (e.g., showing a new picture of a dog after teaching with a single example).
3. Maintenance Checks
  - Conduct follow-up assessments to ensure skills remain over time.
4. Functional Application
  - Assess whether the learner uses discrimination skills in natural environments (e.g., correctly identifying restroom signs in a public setting).



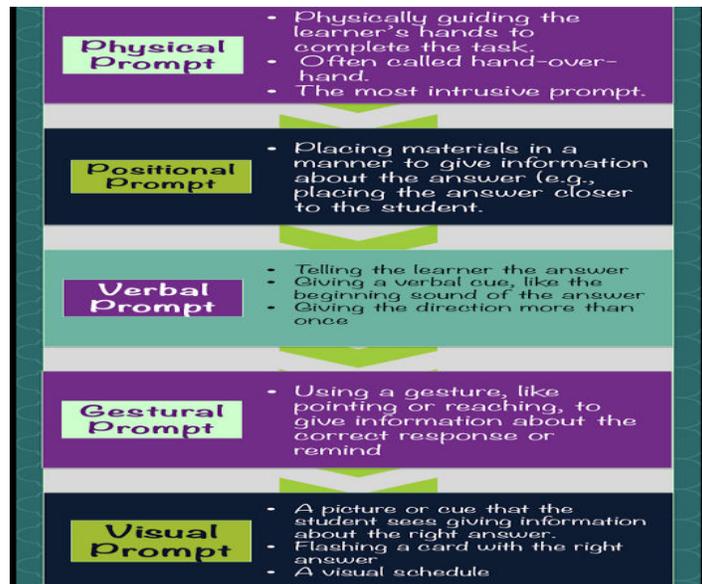
**G.7. Select and evaluate stimulus and response prompting procedures (e.g., errorless, most-to-least, least-to-most).**

Selecting and Evaluating Stimulus and Response Prompting Procedures in ABA

Introduction

In Applied Behavior Analysis (ABA), stimulus and response prompting procedures are essential for teaching new skills and reducing errors during learning. Selecting the appropriate prompting strategy depends on the learner’s abilities, the complexity of the skill being taught, and the goal of achieving independent responding. This article explores different prompting procedures, including errorless learning, most-to-least prompting, and least-to-most prompting, along with methods for evaluating their effectiveness.

1. Understanding Stimulus and Response Prompts



### Stimulus Prompts

Stimulus prompts modify the antecedent stimulus to increase the likelihood of a correct response. These include:

- Positional prompts: Placing the correct item closer to the learner.
- Redundancy cues: Highlighting or enlarging the correct option.
- Superimposition prompts: Adding extra visual, auditory, or textual cues (e.g., bolding a correct answer in a worksheet).

### Response Prompts

Response prompts are additional cues or assistance provided to help the learner emit the correct response. These include:

- Verbal prompts: Providing spoken instructions or hints.
- Gestural prompts: Using pointing, nodding, or eye gaze to indicate the correct response.
- Modeling prompts: Demonstrating the correct behavior.
- Physical prompts: Physically guiding the learner (full or partial hand-over-hand assistance).

## 2. Selecting Prompting Procedures

### A. Errorless Learning (Most-to-Least Prompting)

Description:

- Errorless learning is a technique in which prompts are provided before errors can occur, ensuring the learner always responds correctly.
- This typically involves most-to-least prompting, where maximum support (e.g., full physical guidance) is given initially and systematically faded over time.

When to Use:

- Teaching new skills.
- Working with learners who become frustrated or disengaged when making errors.
- Situations where minimizing errors is crucial (e.g., safety skills).

Advantages:

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- Reduces frustration and increases success.
- Helps establish correct stimulus-response relationships quickly.

Disadvantages:

- Requires careful fading to prevent prompt dependence.
- May not encourage problem-solving or independent learning as quickly as other methods.

### B. Least-to-Most Prompting

Description:

- In least-to-most prompting, the learner is given an opportunity to respond independently. If they do not respond or make an error, increasing levels of prompts are provided until the correct response is achieved.

When to Use:

- When the learner has some prior knowledge of the skill but requires guidance.
- For learners who benefit from independent problem-solving opportunities.
- When working with older children or individuals with emerging independence skills.

Advantages:

- Encourages independent responding.
- Allows learners to attempt a response before assistance is given.

Disadvantages:

- May lead to errors that need to be corrected.
- Can be time-consuming if multiple levels of prompts are required.

### C. Graduated Guidance

Description:

- A type of most-to-least physical prompting where the instructor provides immediate but subtle physical guidance and gradually fades it as the learner gains independence.

When to Use:

- Teaching motor skills or chained behaviors (e.g., self-care, vocational tasks).

Advantages:

- Ensures fluid transition between prompting and independent responding.

Disadvantages:

- Requires high levels of instructor skill to adjust prompting in real time.

#### D. Time-Delay Prompting

Description:

- Uses a systematic delay between the SD and the prompt to encourage independent responding.
- Can be constant (fixed delay) or progressive (gradually increasing delay).

When to Use:

- For learners who need support in responding but can gradually transition to independence.
- Teaching discrimination tasks (e.g., sight-word recognition, math facts).

Advantages:

- Promotes independent responding without abrupt removal of prompts.

Disadvantages:

- Requires precise timing from the instructor.

### 3. Evaluating the Effectiveness of Prompting Procedures

#### A. Data Collection Methods

To determine the effectiveness of prompting procedures, ABA practitioners use data collection and analysis:

1. Prompt Level Data
  - Track which prompts are needed for correct responding.
  - Example: Recording how often full physical, partial physical, or verbal prompts are used.
2. Latency to Respond
  - Measure how long the learner takes to respond independently.
  - Faster responses indicate greater fluency.

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### 3. Error Rate

- Count incorrect responses to evaluate whether prompts are fading too quickly or slowly.

### 4. Maintenance and Generalization Probes

- Test whether the learner can perform the skill across different settings, people, and materials without prompts.

## B. Criteria for Effectiveness

A prompting procedure is effective if:

✓ the learner requires fewer prompts over time.

✓ the learner does not become prompt dependent.

✓ the skill generalizes to new contexts.

✓ Independent responding increases.

If these criteria are not met, adjustments may be needed, such as:

- Switching from least-to-most to most-to-least prompting if the learner is making too many errors.

- Increasing time delays in time-delay prompting if the learner is waiting for prompts.

- Providing reinforcement for independent responses to avoid prompt dependence.

## 4. Practical Application Example

### Case Study: Teaching a Child to Request Help

1. Goal: Teach a child to say, “Help me” instead of engaging in problem behavior.

2. Selected Prompting Procedure: Most-to-least prompting with time-delay.

3. Implementation:

- Initially, the instructor models the phrase and provides full physical prompting to encourage verbalization.

- Over time, prompts are faded to partial physical, gestural, and finally just a verbal cue.

- A 3-second time delay is introduced to allow for independent responding before prompts are given.
4. Evaluation:
- Data collection showed a decrease in prompted responses and an increase in independent requests over 2 weeks.
  - Maintenance checks confirmed the skill remained even after prompts were removed.

**G.8. Design and implement procedures to fade stimulus and response prompts (e.g., prompt delay, stimulus fading).**

Designing and Implementing Procedures to Fade Stimulus and Response Prompts in ABA

Introduction

Prompting is a fundamental strategy in Applied Behavior Analysis (ABA) used to assist learners in acquiring new skills. However, excessive reliance on prompts can lead to prompt dependency, where the individual waits for a prompt rather than responding independently. To ensure independence and generalization, behavior analysts must design and implement effective prompt fading procedures.

This article explores stimulus fading and response prompt fading techniques, including prompt delay and stimulus fading, as well as best practices for evaluating their effectiveness.

1. Understanding Stimulus and Response Prompts

Stimulus Prompts vs. Response Prompts

- Stimulus Prompts modify the environment to increase the likelihood of a correct response (e.g., highlighting the correct answer, using visual cues).
- Response Prompts involve direct assistance to the learner to help them produce the correct response (e.g., verbal, gestural, physical guidance).

Both types of prompts must be systematically faded to promote independent responding.

2. Fading Response Prompts

Response prompts guide the learner to perform a behavior. Common methods for fading response prompts include:

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### A. Most-to-Least Prompt Fading

#### Description:

- Begins with maximum support (e.g., full physical prompting) and gradually reduces assistance over time.

#### When to Use:

- For learners who require errorless learning (e.g., individuals with significant learning delays).
- Teaching new and complex behaviors (e.g., self-care skills).

#### Example:

##### Teaching hand washing:

1. Full physical prompt – Hand-over-hand assistance.
2. Partial physical prompt – Lightly guiding the learner’s hands.
3. Gestural prompt – Pointing to the soap.
4. No prompt – The learner washes hands independently.

### B. Least-to-Most Prompt Fading

#### Description:

- Allows the learner to attempt a response independently first.
- If the learner fails or hesitates, increasing levels of prompting are provided.

#### When to Use:

- When the learner has some prior knowledge of the skill.
- To promote problem-solving and independence.

#### Example:

##### Teaching a child to tie shoelaces:

1. Give no prompt – Wait for the child to attempt.
2. If incorrect, provide a verbal prompt (“Now make a loop”).
3. If still incorrect, provide a model prompt by demonstrating.
4. If the child struggles, use partial physical guidance.

### C. Graduated Guidance

#### Description:

- Provides immediate physical support and then gradually fades it.
- The instructor loosens guidance as the learner becomes more independent.

#### When to Use:

- For teaching motor skills or chained behaviors (e.g., brushing teeth, handwriting).

#### Example:

##### Teaching a child to ride a bike:

1. Full physical guidance – Holding the child’s back and handlebars.
2. Loosen support – Holding only the back.
3. Shadowing – Walking alongside without touching.
4. No prompt – The child rides independently.

### D. Time-Delay Prompt Fading

#### Description:

- Introduces a delay between the SD (instruction) and the prompt, encouraging independent responses before prompting is provided.
- Can be constant delay (e.g., always 3 seconds) or progressive delay (e.g., increasing delay over time).

#### When to Use:

- Teaching discrimination tasks (e.g., selecting colors, reading sight words).

#### Example:

##### Teaching color identification:

1. Say, “Point to red” and immediately guide the learner’s hand (0-second delay).
2. After multiple correct trials, introduce a 2-second delay before prompting.
3. Gradually increase the delay until the learner responds independently.

### 3. Fading Stimulus Prompts

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Stimulus prompts modify the stimulus itself to encourage correct responses. Common stimulus fading procedures include:

### A. Stimulus Fading

Description:

- Initially, a salient feature of the stimulus is exaggerated and gradually faded.

When to Use:

- Teaching discrimination skills (e.g., letter recognition, object sorting).

Example:

Teaching letter recognition:

1. Present the letter “A” in a large, bold font.
2. Gradually reduce the boldness and size.
3. The letter appears in standard text as the learner discriminates correctly.

### B. Superimposition and Stimulus Fading

Description:

- Initially, an extra stimulus is added to highlight the correct answer, then faded over time.

When to Use:

- Teaching matching, categorization, and visual discrimination.

Example:

Teaching number recognition:

1. Present the number “3” along with three dots.
2. Gradually fade the dots, leaving only the numeral “3”.

### C. Positional Prompt Fading

Description:

- The correct stimulus is placed in an obvious location to increase selection accuracy, then gradually moved to random positions.

When to Use:

- Teaching matching and sorting tasks.

Example:

Teaching shape sorting:

1. Place the correct shape closer to the learner.
2. Gradually move all shapes to an equal distance.

#### 4. Evaluating the Effectiveness of Prompt Fading

##### A. Data Collection Methods

To assess the effectiveness of prompt fading procedures, behavior analysts should collect:

1. Prompt Level Data
  - Track which prompts are needed and when they are faded.
2. Error Rate Tracking
  - Monitor incorrect responses to determine whether fading is too fast or too slow.
3. Latency to Respond
  - Measure the time it takes for a learner to respond independently.
4. Maintenance and Generalization Probes
  - Test whether the learner can perform the skill without prompts in new settings.

##### B. Criteria for Successful Fading

A prompting procedure is effective if:

- ✓ The learner requires fewer prompts over time.
- ✓ The skill maintains without prompts.
- ✓ The learner can generalize the skill across different conditions.

If these criteria are not met, adjustments may be necessary, such as:

- Slowing down fading if the learner is making too many errors.
- Switching from most-to-least to time-delay procedures to increase independence.
- Reintroducing prompts temporarily if errors increase significantly.

## 5. Practical Application Example

### Case Study: Teaching a Child to Read Sight Words

1. Initial Phase:
  - Use stimulus fading by enlarging the sight words and pairing them with pictures.
  - Use most-to-least prompting (full verbal prompts: “This says ‘cat’”).
2. Fading Phase:
  - Reduce verbal prompts to partial (“What does this say? It starts with /c/”).
  - Introduce a 2-second time delay before prompting.
  - Gradually remove visual cues.
3. Evaluation:
  - Data shows a decrease in prompt use and increased independent reading.
  - Maintenance and generalization checks confirm long-term retention.

## **G.9. Design and evaluate modeling procedures.**

### Designing and Evaluating Modeling Procedures in ABA

#### Introduction

Modeling is a key teaching strategy in Applied Behavior Analysis (ABA) that involves demonstrating a desired behavior so that the learner can observe and imitate it. Modeling is effective for teaching social skills, motor skills, communication, and adaptive behaviors. To ensure successful implementation, behavior analysts must carefully design, implement, and evaluate modeling procedures to promote skill acquisition and generalization.

#### 1. Understanding Modeling in ABA

What is Modeling?

## What is Modeling?

**Modeling** is a teaching technique where you **demonstrate** a desired behavior, skill, or response for your child to **observe and imitate**.

Instead of Asking or Telling	Try to Show Your Child
Can you say <b>ball</b> ?	<b>“Ball”</b> (while holding a ball)
What is <b>this</b> ?	I see a <b>dog!</b> Woof-Woof!
Ask for <b>help</b>	<b>Help</b>

Modeling is a behavioral intervention technique in which an individual learns by watching another person perform a behavior and then imitating it.

- The model can be a teacher, therapist, peer, parent, or even a video.
- The learner observes the model and then attempts to replicate the behavior.
- Reinforcement is provided to strengthen the imitated response.

### Types of Modeling

1. Live Modeling – A real person demonstrates the behavior in the presence of the learner.
  - Example: A therapist demonstrates how to use a spoon to eat.
2. Video Modeling – The learner watches a pre-recorded demonstration.
  - Example: A child watches a video of someone tying their shoes before attempting the task.
3. Peer Modeling – A peer demonstrates the behavior, often used in social skills training.
  - Example: A classmate models how to raise their hand before speaking.
4. Self-Modeling – The learner watches a video of themselves successfully engaging in a behavior.
  - Example: A student watches a video of themselves correctly pronouncing words.

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5. Symbolic Modeling – The behavior is demonstrated through cartoons, books, or digital characters.

- Example: A child watches an animated character demonstrating hand washing.

### 2. Designing an Effective Modeling Procedure

#### A. Identify the Target Behavior

- The behavior should be clearly defined and observable.
- Example: Teaching a child to greet others by saying, “Hello” and waving.

#### B. Select an Appropriate Model

- The model should be competent, engaging, and relevant to the learner.
- Peer models are often more effective than adult models for social skills.
- Video modeling should be clear and focus on the target behavior.

#### C. Break the Behavior into Steps (Task Analysis if Needed)

- If the behavior is complex, break it down into smaller components.
- Example: Teaching shoe tying:
  1. Hold the laces.
  2. Cross the laces.
  3. Pull one lace under.
  4. Form a loop with one lace.
  5. Wrap the other lace around the loop.
  6. Pull the second lace through and tighten the bow.

#### D. Ensure Attention and Motivation

- The learner must be paying attention to the model.
- Use preferred models (e.g., peers, parents, or videos featuring favorite characters).
- Incorporate motivating operations (e.g., reinforcing engagement with a preferred activity).

#### E. Provide Opportunities for Imitation

- After the model demonstrates the behavior, provide the learner immediate opportunities to imitate.
- Example: After a therapist models clapping, the learner is encouraged to clap.

#### F. Reinforce Imitation

- Use immediate reinforcement to strengthen the behavior.
- Reinforcement can include verbal praise, tangible rewards, or access to preferred activities.
- Example: “Great job waving! You get a high-five!”

#### G. Use Prompting and Prompt Fading as Needed

- If the learner does not imitate immediately, use gestural or physical prompts.
- Gradually fade prompts to promote independent imitation.

### 3. Evaluating the Effectiveness of a Modeling Procedure

To determine if a modeling procedure is effective, behavior analysts should collect and analyze data on the learner’s progress.

#### A. Data Collection Methods

1. Frequency Recording – Count how many times the learner imitates the modeled behavior.
  - Example: A therapist tracks how often a child correctly imitates a modeled social greeting.
2. Latency Recording – Measure how long it takes the learner to imitate after the model’s demonstration.
  - Example: Recording the number of seconds it takes a child to clap after seeing the model clap.
3. Percentage of Correct Imitation – Measure accuracy over time.
  - Example: A student successfully imitates 8 out of 10 modeled responses (80% accuracy).
4. Generalization Probes – Assess whether the learner can imitate the behavior in new settings, with new people, or using new materials.

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- Example: A child learns to wave to the therapist and later waves to a peer in the classroom.

5. Maintenance Checks – Conduct follow-up assessments weeks or months later to ensure the skill is retained.

### B. Criteria for Success

A modeling procedure is considered successful if:

- ✓ The learner imitates the behavior with minimal prompting.
- ✓ The skill generalizes across different settings and people.
- ✓ The learner maintains the skill over time.
- ✓ Prompting decreases while independent responding increases.

If these criteria are not met, modifications may be needed, such as:

- Using a more engaging model (e.g., switching to a peer model or video).
- Incorporating additional reinforcement for imitation.
- Using a different type of modeling (e.g., switching from live to video modeling).

### 4. Practical Application Example

#### Case Study: Teaching a Child to Request Help Using Video Modeling

##### Step 1: Identify the Target Behavior

- Goal: Teach a child with autism to request help by saying “Help me” or using a communication device.

##### Step 2: Create a Video Model

- The therapist records a video of a peer asking for help in various scenarios.
- The video shows the peer successfully receiving assistance after making the request.

##### Step 3: Implement the Modeling Procedure

- The child watches the video multiple times before engaging in a structured activity.

- The therapist sets up a situation where the child needs help (e.g., placing a toy in a closed container).
- The therapist waits for the child to imitate the request or provides a verbal prompt if necessary.

#### Step 4: Reinforce and Fade Prompts

- If the child requests help, reinforcement is given immediately.
- Over time, prompts are faded until the child requests help independently.

#### Step 5: Evaluate Effectiveness

- Data is collected on how often the child requests help independently.
- Generalization is tested by having different people interact with the child.
- A maintenance probe is conducted two weeks later to see if the child continues using the skill.

### **G.10. Design and evaluate instructions and rules.**

#### Designing and Evaluating Instructions and Rules in ABA

##### Introduction

Instructions and rules are essential components of Applied Behavior Analysis (ABA) for teaching new skills, shaping behavior, and promoting independence. Effective instructional design ensures clarity and maximizes learning, while well-structured rules help guide behavior in both structured and natural environments. To ensure success, behavior analysts must systematically design, implement, and evaluate instructional strategies and rule-based interventions.

#### 1. Understanding Instructions and Rules in ABA

##### Instructions vs. Rules

- Instructions provide explicit guidance on what behavior to perform and how to perform it.
- Example: “Touch your nose” (instruction for a discrete trial).
- Rules specify behavioral contingencies—stating what behavior is expected and the consequences of following or not following it.

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- Example: “If you finish your homework, you can play video games.”

Both instructions and rules serve to increase compliance, skill acquisition, and self-regulation when effectively designed and implemented.

### 2. Designing Effective Instructions

#### A. Characteristics of Effective Instructions

To be effective, instructions should be:

- ✓ Clear and concise – Avoid unnecessary words or complexity.
- ✓ Specific – Define exactly what is expected.
- ✓ Developmentally appropriate – Tailored to the learner’s cognitive and language abilities.
- ✓ Presented in a way the learner understands – Use verbal, visual, or gestural instructions as needed.
- ✓ Paired with modeling or prompting if necessary – To support comprehension.

#### B. Steps for Designing Instructions

1. Define the Desired Behavior
  - Example: Teaching a child to raise their hand before speaking.
2. Choose the Mode of Instruction Delivery
  - Verbal instructions: “Raise your hand before speaking.”
  - Visual instructions: A picture of a student raising their hand.
  - Physical modeling: The teacher demonstrates raising a hand.
3. Use Simple, Direct Language
  - Ineffective: “It would be a great idea if you could possibly raise your hand instead of blurting out.”
  - Effective: “Raise your hand before speaking.”
4. Ensure Instructions are Given Immediately Before the Behavior is Expected
  - Example: Before a lesson begins, remind students: “Raise your hand if you have a question.”

5. Pair Instructions with Reinforcement
  - If the learner follows the instruction correctly, provide praise or tangible reinforcement.
6. Use Repetition and Consistency
  - Repeated exposure ensures the learner remembers and generalizes the instruction.

### 3. Designing Effective Rules

#### A. Characteristics of Effective Rules

Well-designed rules should:

- ✓ Clearly specify the expected behavior.
- ✓ Include the consequence for following or breaking the rule.
- ✓ Be positively stated when possible.
- ✓ Be limited in number to avoid overwhelming the learner.
- ✓ Be visually accessible if necessary (e.g., written or posted rules).

#### B. Steps for Designing Rules

1. Identify the Behavioral Goal
  - Example: Increasing classroom participation.
2. Develop a Simple, Concrete Rule
  - Example: “Raise your hand before speaking to get a turn.”
3. Specify the Consequence
  - Positive consequence: “If you raise your hand, the teacher will call on you.”
  - Negative consequence: “If you speak without raising your hand, you will not get a turn.”
4. Make Rules Visible and Accessible
  - Post them in common areas (e.g., classroom wall, behavior chart).
  - Use visual supports for non-readers (e.g., icons or pictures).

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5. Teach and Reinforce the Rule
  - Model and practice the rule regularly.
  - Reinforce compliance with praise, rewards, or privileges.
6. Monitor and Revise as Needed
  - Evaluate rule effectiveness based on behavioral outcomes.

### 4. Evaluating the Effectiveness of Instructions and Rules

#### A. Data Collection Methods

1. Frequency Recording
  - Count how often the learner follows the instruction or rule correctly.
  - Example: Track how many times a student raises their hand instead of calling out.
2. Percentage of Compliance
  - Measure correct responses out of total opportunities.
  - Example: If a child follows the instruction 8 out of 10 times, their compliance rate is 80%.
3. Latency Recording
  - Measure how quickly the learner responds to an instruction.
  - Example: A student should sit down within 5 seconds after being told “Take your seat.”
4. Generalization Probes
  - Assess if the learner follows the instruction or rule in new settings or with different people.
  - Example: Does the child raise their hand in different classrooms?
5. Maintenance Checks
  - Evaluate whether the rule or instruction continues to be followed weeks or months later.

#### B. Criteria for Success

A rule or instruction is effective if:

- ✓ The learner follows the instruction consistently with minimal prompting.
- ✓ The rule is adhered to across different environments.
- ✓ The skill maintains over time without excessive reinforcement.
- ✓ Prompting decreases while independent compliance increases.

If these criteria are not met, modifications may be necessary, such as:

- Simplifying the instruction for better comprehension.
- Adding reinforcement to increase motivation.
- Providing additional teaching opportunities or practice.

## 5. Practical Application Example

### Case Study: Teaching Classroom Rules Using ABA Principles

#### Step 1: Identify the Target Behavior

- Increase waiting for a turn to speak in a kindergarten classroom.

#### Step 2: Design Clear Rules

- Rule: “Raise your hand to speak.”
- Positive consequence: Teacher calls on the student.
- Negative consequence: If a student speaks out, they are reminded to raise their hand first.

#### Step 3: Implement Rule Instruction

- Modeling: Teacher demonstrates raising a hand before speaking.
- Visual supports: A poster with a child raising their hand.
- Role-playing: Students practice the correct behavior.

#### Step 4: Reinforce Rule Compliance

- When students raise their hands, they receive verbal praise and stickers.
- Students who blurt out are prompted to raise their hands instead.

#### Step 5: Evaluate Effectiveness

- Data collection showed a 50% increase in hand-raising behavior within two weeks.
- Generalization probe revealed students followed the rule in other classrooms.
- Maintenance checks confirmed the rule was still followed after one month.

### **G.11. Shape dimensions of behavior.**

#### Shaping Dimensions of Behavior in ABA

##### Introduction

Shaping is a fundamental procedure in Applied Behavior Analysis (ABA) that involves systematically reinforcing successive approximations of a target behavior. Shaping can be used to modify various dimensions of behavior, including topography, latency, duration, magnitude, and frequency. By reinforcing incremental improvements, shaping promotes skill acquisition, increases behavioral complexity, and refines responses to meet specific learning goals.

##### 1. Understanding the Dimensions of Behavior

The dimensions of behavior refer to measurable aspects that can be shaped to improve or refine a response. Common dimensions targeted in ABA include:

##### A. Topography (Form of the Behavior)

- Definition: The physical form or structure of a response.
- Example: Teaching a child to hold a pencil correctly when writing.

##### B. Latency (Time between Stimulus and Response)

- Definition: The time delay between the presentation of a stimulus (SD) and the onset of a response.
- Example: Reducing the time it takes for a student to start working after being given an instruction.

##### C. Duration (Length of Time the Behavior Occurs)

- Definition: The total time a behavior is performed.
- Example: Increasing the amount of time a child engages in independent play.

##### D. Magnitude (Intensity of the Response)

- Definition: The force, volume, or strength of a behavior.
- Example: Teaching a child to speak louder in social settings.

#### E. Frequency (Rate of the Behavior)

- Definition: The number of times a behavior occurs within a specific time frame.
- Example: Increasing the number of times a student raises their hand in class.

By shaping these dimensions, ABA practitioners can gradually refine behavior and help individuals achieve desired skill levels.

## 2. Designing a Shaping Procedure for Different Dimensions

### Step 1: Define the Target Behavior and Dimension

- Clearly identify the behavior and the specific dimension that needs modification.
- Example: Increasing the volume (magnitude) of a child's speech during classroom interactions.

### Step 2: Identify the Starting Point (Baseline)

- Collect baseline data to measure the current level of performance.
- Example: The child currently speaks at a very soft volume (low magnitude).

### Step 3: Break the Behavior into Successive Approximations

- Determine incremental steps that gradually shape the behavior toward the goal.
- Example:
  - Step 1: Reinforce whispering responses.
  - Step 2: Reinforce speaking at a conversational tone.
  - Step 3: Reinforce projecting the voice across the room.

### Step 4: Use Differential Reinforcement

- Provide reinforcement for closer approximations and withhold it for previous levels.
- Example: Reinforce slightly louder speech but no longer reinforce whispering.

### Step 5: Gradually Increase Expectations

- As performance improves, reinforcement criteria become stricter to shape the behavior further.

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- Example: Reinforce speech only when it reaches an appropriate volume for group discussions.

### Step 6: Generalization and Maintenance

- Ensure the new behavior occurs across different settings, people, and contexts.
- Example: Encourage the child to use a louder voice at home, in social settings, and with peers.

### 3. Examples of Shaping Different Dimensions of Behavior

#### A. Shaping Topography (Form of Behavior)

Goal: Improve handwriting legibility.

Process:

1. Reinforce any attempt at writing letters.
2. Reinforce correct letter shapes but allow inconsistent size.
3. Reinforce consistent letter size and spacing.
4. Reinforce clear, properly spaced handwriting.

#### B. Shaping Latency (Response Time to a Cue)

Goal: Reduce the time it takes for a student to begin working after hearing “Start your worksheet.”

Process:

1. Reinforce if the student starts within 30 seconds.
2. Reinforce if the student starts within 20 seconds.
3. Reinforce if the student starts within 10 seconds.
4. Reinforce if the student starts immediately.

#### C. Shaping Duration (How Long a Behavior is Performed)

Goal: Increase a child’s ability to sustain independent reading time.

Process:

1. Reinforce reading for 1 minute.
2. Reinforce reading for 3 minutes.

3. Reinforce reading for 5 minutes.
4. Gradually increase to 15 minutes.

#### D. Shaping Magnitude (Intensity of the Response)

Goal: Increase the strength of a handshake in social greetings.

Process:

1. Reinforce any handshake attempt.
2. Reinforce firmer handshakes while shaping pressure levels.
3. Reinforce a moderately firm handshake.
4. Reinforce consistently firm and confident handshakes.

#### E. Shaping Frequency (How Often a Behavior Occurs)

Goal: Increase how often a student participates in classroom discussions.

Process:

1. Reinforce raising a hand once per class.
2. Reinforce raising a hand twice per class.
3. Reinforce raising a hand three times per class.
4. Maintain consistent participation at the target level.

### 4. Evaluating the Effectiveness of Shaping Procedures

#### A. Data Collection Methods

To measure progress, practitioners should collect objective data:

1. Frequency Data
  - Track how often the behavior occurs (e.g., number of times a student raises their hand).
2. Latency Data
  - Measure time between instruction and response (e.g., time taken to start a task).
3. Duration Recording
  - Record the length of time a behavior lasts (e.g., how long a child engages in play).

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### 4. Magnitude Measurement

- Use decibel meters for speech volume or force meters for handshake pressure.

### B. Criteria for Success

Shaping is effective if:

- ✓ The behavior gradually improves in the targeted dimension.
- ✓ The learner no longer requires prompts to perform the behavior.
- ✓ The behavior generalizes across environments and people.
- ✓ The rate of reinforcement decreases as independent responding increases.

If progress is slow, adjustments may include:

- Breaking down approximations further.
- Providing more frequent reinforcement.
- Modifying reinforcer strength to maintain motivation.

### 5. Practical Application Example: Shaping Conversation Skills

Scenario:

A teenager with social anxiety speaks in short, one-word responses during conversations. The goal is to shape longer, more natural conversations.

Shaping Plan:

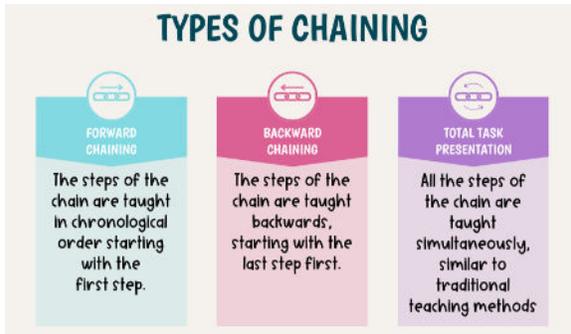
1. Reinforce any spoken response (e.g., “Yes” or “No”).
2. Reinforce one-word responses + a short phrase (e.g., “Yes, I like that.”).
3. Reinforce full-sentence responses (e.g., “Yes, I like playing video games.”).
4. Reinforce responses that include follow-up questions (e.g., “Yes, I like video games. What’s your favorite game?”).
5. Reinforce fluid, back-and-forth conversation exchanges.

Evaluation:

- Frequency data collected on the number of words per response.

- Generalization probes conducted with different conversation partners.
- Maintenance checks to assess long-term skill retention.

## G.12. Select and implement chaining procedures.



### Selecting and Implementing Chaining Procedures in ABA

#### Introduction

Chaining is a widely used procedure in Applied Behavior Analysis (ABA) to teach complex behaviors that consist of multiple steps. It involves breaking down a behavioral sequence into smaller, teachable components and systematically teaching them in a specific order. By selecting and implementing effective chaining procedures, ABA practitioners help learners acquire functional skills such as handwashing, dressing, cooking, and vocational tasks.

This article explores how to select and implement chaining procedures, including forward chaining, backward chaining, and total task chaining, and how to evaluate their effectiveness.

#### 1. Understanding Chaining in ABA

##### What is chaining?

Chaining is a teaching method that breaks down a complex behavior into smaller, sequential steps (task analysis) and systematically teaches each step until the full behavior is mastered.

##### Examples of Chained Behaviors

- Daily living skills (e.g., brushing teeth, tying shoes)
- Communication sequences (e.g., ordering food at a restaurant)
- Academic skills (e.g., solving multi-step math problems)
- Vocational tasks (e.g., making a sandwich, assembling products)

## 2. Selecting the Appropriate Chaining Procedure

ABA practitioners select a chaining procedure based on:

- ✓ The learner's skill level and independence.
- ✓ The complexity of the behavior being taught.
- ✓ The learner's ability to tolerate prompting and reinforcement schedules.

The three primary chaining procedures include:

### A. Forward Chaining

Description:

- The first step in the chain is taught first.
- Once the learner masters the first step, the next step is introduced.
- This continues until the entire behavior is completed independently.

When to Use:

- ✓ When the learner benefits from learning a logical, step-by-step progression.
- ✓ When the initial steps of the behavior are easier or frequently encountered.

Example: Teaching Handwashing Using Forward Chaining

1. Step 1: Turn on the water (taught first).
2. Once mastered, teach Step 2: Wet hands.
3. Continue until the entire sequence is completed.

### B. Backward Chaining

Description:

- The last step in the chain is taught first.
- Once mastered, the second-to-last step is introduced, working backward until the first step is reached.

When to Use:

- ✓ When the learner benefits from immediate reinforcement upon completing the task.

✓ When the final step is the most functional or rewarding (e.g., zipping up a jacket).

Example: Teaching Handwashing Using Backward Chaining

1. The instructor completes all steps except the last step: Drying hands (learner performs this step).
2. Once mastered, teach Step 9: Turn off the water and then dry hands.
3. Continue teaching in reverse order until the learner performs all steps independently.

C. Total Task Chaining

Description:

- The learner attempts the entire sequence each time.
- Prompts and reinforcement are provided as needed for any unmastered steps.
- The procedure is repeated until full independence is achieved.

When to Use:

- ✓ When the learner already knows some steps but needs support to complete the full task.
- ✓ When the behavior is relatively simple or familiar to the learner.

Example: Teaching Handwashing Using Total Task Chaining

- The learner attempts the entire handwashing sequence every session.
- The therapist provides prompting only when necessary.
- Prompts are faded until full independence is reached.

3. Implementing Chaining Procedures

Step 1: Conduct a Task Analysis

A task analysis breaks the behavior into smaller, teachable steps.

## CREATING & ASSESSING A TASK ANALYSIS

Mayer, Sulzer-Azaroff & Wallace (2014) Behavior Analysis for Lasting Change, Third Edition, Cornwall-on-Hudson, New York, Sloan Publishing, LLC

**WHAT IS A TASK ANALYSIS?**

A task analysis breaks down complex skills into smaller steps or component skills, these components are then taught using a chaining procedure.

**A TASK ANALYSIS IS CREATED BY:**

- Observing a competent performer
- Asking an Expert
- Repeatedly perform the skill

The temporal order of the skills should be considered to ensure accuracy and the availability of reinforcement

**TASK ANALYSIS ASSESSMENT**

**SINGLE OPPORTUNITY ASSESSMENT**

Assess learner's ability to complete each step, once the learner makes an error the assessment ends and every subsequent step is marked as non-occurrence.

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**MULTIPLE OPPORTUNITY ASSESSMENT**

Assess learner's ability to complete each step, when the learner performs an error clinician completes the step and has the learner resume with the next step.

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- Example: Task Analysis for Brushing Teeth

1. Pick up the toothbrush.
2. Open the toothpaste.
3. Squeeze toothpaste onto the brush.
4. Brush top teeth.
5. Brush bottom teeth.
6. Rinse mouth.
7. Put toothbrush away.

Step 2: Choose a Chaining Procedure

- If the learner benefits from learning one step at a time, use forward chaining.
- If the learner needs immediate reinforcement, use backward chaining.
- If the learner can perform some steps already, use total task chaining.

Step 3: Use Prompts and Prompt Fading

- Gestural prompts (pointing to the soap).
- Verbal prompts (“Turn on the water”).
- Physical prompts (hand-over-hand assistance).

- Fade prompts gradually to promote independence.

#### Step 4: Reinforce Correct Responses

- Provide immediate reinforcement after the learner completes each trained step.
- Use differential reinforcement (stronger reinforcement for independent responses).

#### Step 5: Monitor Progress and Adjust

- Collect data on step mastery and adjust teaching as needed.
- If progress slows, break steps into smaller units or increase reinforcement.

### 4. Evaluating the Effectiveness of Chaining Procedures

#### A. Data Collection Methods

To measure progress, ABA practitioners use:

1. Task Analysis Data Sheets
  - Track which steps are completed independently vs. prompted.
2. Percentage of Steps Completed Independently
  - Example: “The learner completed 4 out of 10 steps independently (40%).”
3. Latency Data
  - Measure how long it takes the learner to initiate each step.
4. Generalization Probes
  - Test if the learner can perform the chain in different environments (e.g., washing hands at home vs. school).

#### B. Criteria for Mastery

A chaining procedure is effective if:

- ✓ The learner requires fewer prompts over time.
- ✓ The full behavior is completed independently.
- ✓ The skill generalizes to new settings and materials.
- ✓ The behavior is maintained over time.

If progress is slow, consider:

- Adjusting reinforcement (e.g., increasing frequency or intensity).
- Using a different chaining method (e.g., switching from forward to backward chaining).
- Breaking down steps further in the task analysis.

#### 5. Practical Application Example: Teaching Shoe Tying with Backward Chaining

Scenario:

A child needs to learn how to tie their shoes but struggles with multiple steps.

Implementation with Backward Chaining:

1. The therapist completes all steps except the last step: Pulling the loops tight.
2. Once the child masters this, they are taught making the loops and pulling tight.
3. The process continues backward until the child performs the entire sequence.

Evaluation:

- Baseline Data: The child could complete 0 out of 6 steps independently.
- Progress Data: After 3 weeks, the child completes 4 out of 6 steps independently.
- Generalization Probe: The child successfully ties shoes at home and school.

### **G.13. Design and evaluate trial-based and free operant procedures.**

Designing and Evaluating Trial-Based and Free Operant Procedures in ABA

Introduction

Trial-based and free operant procedures are two fundamental approaches in Applied Behavior Analysis (ABA) used to assess and teach new behaviors. Each method has distinct advantages depending on the learner's skill level, learning goals, and environmental conditions.

This article explores how to design, implement, and evaluate trial-based and free operant procedures to maximize learning effectiveness in ABA interventions.

#### 1. Understanding Trial-Based and Free Operant Procedures

Trial-Based Procedures

A trial-based procedure involves structured learning opportunities where stimuli are presented, and responses are reinforced or corrected systematically.

- Typically used in Discrete Trial Training (DTT).
- Involves a clear antecedent-behavior-consequence (ABC) sequence.
- Learning occurs in individual trials, often in a controlled environment.

Example: Teaching Colors Using a Trial-Based Procedure

1. Antecedent: Therapist says, “Point to blue.”
2. Behavior: Child points to a color.
3. Consequence: If correct, reinforcement (e.g., praise). If incorrect, corrective feedback.

Free Operant Procedures

A free operant procedure allows learners to engage in behaviors without strict trials or instructor control. The individual interacts freely with an environment where reinforcement occurs naturally based on their actions.

- Typically used in naturalistic teaching methods, such as Incidental Teaching and Natural Environment Teaching (NET).
- There are no clear trial boundaries—learning occurs continuously.
- More suited for teaching spontaneous behaviors and increasing engagement.

Example: Teaching Social Initiation Using a Free Operant Procedure

1. The child plays freely in a classroom.
2. The therapist strategically sets up an engaging activity (e.g., placing a favorite toy out of reach).
3. If the child spontaneously requests the toy, they receive reinforcement.
4. If the child does not request, the therapist may use prompting to encourage communication.

2. Designing Trial-Based Procedures

A. Steps for Implementing Trial-Based Procedures

1. Define the Target Behavior

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- Example: Teaching a child to say “hello” when greeted.
- 2. Structure Learning into Trials
  - Each trial includes a clear antecedent, behavior, and consequence (ABC).
  - Example: Therapist says, “Say hello.” If the child responds correctly, reinforcement is given.
- 3. Use Prompts and Prompt Fading
  - Start with most-to-least prompting (e.g., modeling “hello”) and gradually fade.
- 4. Reinforce Correct Responses Immediately
  - Reinforcement should be consistent and immediate (e.g., praise, tokens, or tangible rewards).
- 5. Correct Errors with Error Correction Strategies
  - If the child responds incorrectly, provide a model or repetition and reinforce correct responses.
- 6. Measure Learning Progress
  - Track correct vs. incorrect responses for each trial.

### 3. Designing Free Operant Procedures

#### A. Steps for Implementing Free Operant Procedures

1. Identify the Target Behavior
  - Example: Teaching asking for help naturally during playtime.
2. Create a Stimulating Environment
  - Set up reinforcing activities or situations where the target behavior is likely to occur.
3. Use Incidental Teaching Strategies
  - Wait for the child to initiate (e.g., struggling to open a container).
  - Provide natural reinforcement (e.g., open the container after they request help).
4. Use Reinforcement to Encourage the Target Response
  - Reinforcement should be naturally embedded in the activity (e.g., giving a favorite toy after a request).

5. Minimize Direct Prompts and Maximize Natural Cues
  - Allow the learner to discover learning opportunities independently.
6. Collect Data on Spontaneous Occurrences of the Target Behavior
  - Use frequency counts or duration recording to measure engagement.

#### 4. Comparing Trial-Based and Free Operant Procedures

Feature	Trial-Based Procedure (DTT)	Free Operant Procedure (Naturalistic Teaching)
Structure	Highly structured trials	Open-ended learning environment
Prompting	Direct, systematic prompts	Minimal prompts, natural environmental cues
Reinforcement	Often artificial (e.g., tokens)	Naturally embedded in activities
Learning Context	Controlled environment	Natural environment
Generalization	May require extra programming	Encourages spontaneous generalization
Best for	Teaching new, discrete skills	Increasing spontaneous behaviors

#### 5. Evaluating the Effectiveness of Trial-Based and Free Operant Procedures

##### A. Data Collection Methods

1. For Trial-Based Procedures
  - Use trial-by-trial data sheets to track correct, prompted, and incorrect responses.
  - Calculate the percentage of correct responses across trials.
  - Example:

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- 8 out of 10 trials correct = 80% accuracy.
- 2. For Free Operant Procedures
  - Use frequency recording to track how often the target behavior occurs naturally.
  - Measure latency (how long it takes for the learner to engage in the behavior).
  - Example:
    - If a child requests a toy 3 times in 30 minutes, data is recorded on spontaneous initiations.

### B. Criteria for Success

A procedure is effective if:

- ✓ The learner requires fewer prompts over time.
- ✓ The behavior generalizes to different settings.
- ✓ The behavior occurs independently and spontaneously.

If progress is slow, adjustments may include:

- Increasing reinforcement for correct responses.
- Adjusting prompting strategies (e.g., more naturalistic cues for free operant procedures).
- Combining both approaches (e.g., using trial-based teaching for skill acquisition and free operant procedures for generalization).

### 6. Practical Application Example: Teaching Manding (Requesting Items)

Scenario:

A child with limited verbal skills needs to learn how to request preferred items.

Trial-Based Procedure (DTT Approach):

1. Antecedent: Therapist holds up a cookie and says, "Say cookie."
2. Behavior: The child attempts to say "cookie."
3. Consequence: If correct, the child receives the cookie; if incorrect, the therapist models the correct response.

4. Data is collected on accuracy and prompts used.

Free Operant Procedure (Natural Environment Approach):

1. The therapist places a cookie on a high shelf while the child plays.
2. If the child naturally reaches for the cookie, the therapist waits.
3. If the child spontaneously says “cookie”, they receive it as reinforcement.
4. If no response occurs, the therapist models or prompts a request.
5. Data is collected on spontaneous requests.

Evaluation:

- DTT Data: The child reaches 90% accuracy in a structured setting.
- Free Operant Data: The child spontaneously requests cookies 5 times during play.
- Conclusion: The child acquired the skill through DTT and generalized it using the free operant method.

#### **G.14. Design and evaluate group contingencies.**

Designing and Evaluating Group Contingencies in ABA

Introduction

Group contingencies are a powerful behavior management strategy used in Applied Behavior Analysis (ABA) to modify the behavior of multiple individuals simultaneously. By implementing group contingencies, behavior analysts can promote cooperation, reduce problem behaviors, and enhance motivation in settings such as classrooms, workplaces, and therapeutic groups.

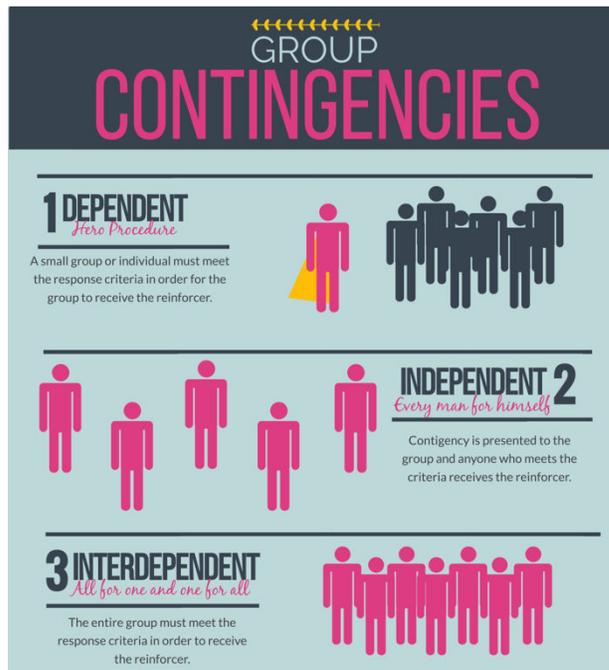
This article explores how to design, implement, and evaluate group contingencies, including independent, dependent, and interdependent contingencies, to maximize their effectiveness.

##### 1. Understanding Group Contingencies

What is a Group Contingency?

A group contingency is a behavioral intervention in which reinforcement (or punishment) is contingent upon the behavior of one or more individuals within a group. These contingencies promote peer influence, teamwork, and accountability.

## Types of Group Contingencies



1. Independent Group Contingency
  - Each individual earns reinforcement based on their own behavior.
  - Example: Students earn a sticker if they complete their homework.
2. Dependent Group Contingency (aka “Hero Procedure”)
  - Reinforcement for the entire group depends on one or a few members meeting the criteria.
  - Example: If John finishes his classwork, the whole class gets extra recess.
3. Interdependent Group Contingency
  - Reinforcement is given only if all group members meet the criteria.
  - Example: The class earns a pizza party if everyone turns in their homework for a week.

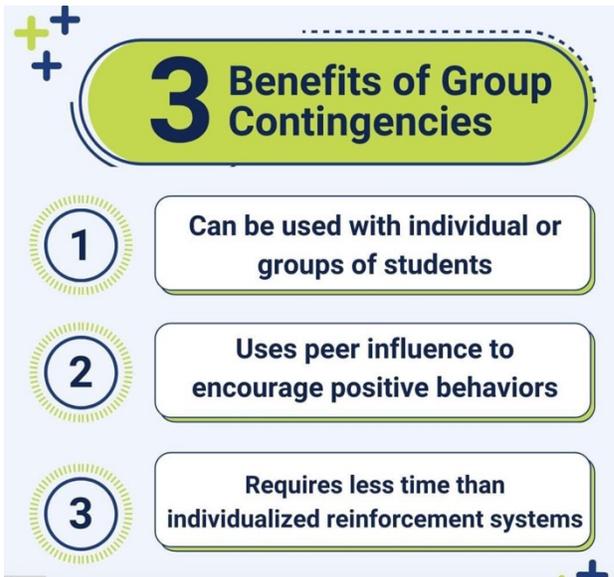
## 2. Designing an Effective Group Contingency

### Step 1: Define the Target Behavior

- Clearly specify the behavior that will be reinforced or discouraged.
- Example: Increasing classroom participation (e.g., raising hands to answer).

### Step 2: Select the Appropriate Type of Contingency

- Use an independent contingency if individuals should be responsible for their own behavior.
- Use a dependent contingency if a specific individual(s) will influence group reinforcement.
- Use an interdependent contingency if teamwork and collective responsibility are the goal.



### Step 3: Establish Reinforcement Criteria

- Determine what behaviors must occur and how frequently for reinforcement to be earned.
- Example: “The class will earn extra recess if at least 80% of students raise their hands instead of calling out.”

### Step 4: Select Meaningful Reinforcers

- Use preference assessments to identify effective reinforcers for the group.
- Reinforcers should be accessible, desirable, and appropriate for the setting.
- Example: Extra computer time, class rewards, verbal praise, or tangible rewards.

### Step 5: Implement and Monitor

- Clearly explain the contingency to the group and provide visual cues (e.g., charts, token boards).

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- Collect baseline data before implementation.
- Monitor individual and group performance.

### 3. Evaluating the Effectiveness of Group Contingencies

#### A. Data Collection Methods

To determine effectiveness, behavior analysts should systematically collect data:

1. Frequency Recording
  - Track how often the target behavior occurs across individuals.
  - Example: Count the number of times students raise their hands instead of calling out.
2. Percentage of Group Participation
  - Measure the percentage of individuals meeting the criteria.
  - Example: If 20 out of 25 students comply, the class meets an 80% threshold.
3. Latency Recording
  - Track how quickly behaviors improve after implementing the contingency.
  - Example: How long does it take before students consistently follow classroom rules?
4. Reinforcement Effectiveness Assessment
  - Assess whether the chosen reinforcers are motivating enough for the group.
  - Example: If behavior does not improve, consider adjusting reinforcement frequency or type.

#### B. Evaluating Success and Making Adjustments

A group contingency is successful if:

- ✓ The target behavior increases (or problem behavior decreases).
- ✓ Reinforcement is delivered consistently based on clear criteria.
- ✓ All or most members participate in meeting the contingency.
- ✓ The intervention maintains effectiveness over time.

If progress is slow, consider:

- Modifying reinforcement criteria (e.g., adjusting expectations from 100% participation to 80%).
- Switching contingency types (e.g., from interdependent to independent if some learners are disengaged).
- Using additional reinforcers to increase motivation.

#### 4. Practical Examples of Group Contingencies in ABA

##### Example 1: Using an Independent Group Contingency in a Classroom

Goal: Increase on-task behavior during independent work.

Implementation:

- Each student earns points for staying on task.
- At the end of the week, students with 10+ points earn extra free time.

Evaluation:

- Track individual on-task behavior for each student.
- If 80% of students meet the goal, the intervention is working.

##### Example 2: Using a Dependent Group Contingency for Peer Influence

Goal: Reduce classroom disruptions.

Implementation:

- The teacher selects a “mystery student” each day.
- If that student stays on-task and follows directions, the whole class gets a reward.

Evaluation:

- Measure peer influence on behavior (e.g., do students encourage each other?).
- If behavior improves across the group, the contingency is effective.

##### Example 3: Using an Interdependent Group Contingency for Teamwork

Goal: Improve group participation in cooperative learning.

Implementation:

- The whole class must complete a collaborative project with equal participation.

- If all students contribute, they earn a class party.

Evaluation:

- Track individual contributions to ensure fairness.
- If some students are not engaged, adjust expectations or provide additional supports.

## 5. Advantages and Challenges of Group Contingencies

Advantages

- ✓ Encourages peer accountability.
- ✓ Increases motivation and engagement.
- ✓ Reduces the need for individual reinforcement in large groups.
- ✓ Promotes social skills and teamwork.

Challenges

- ✗ Risk of punishment effects (e.g., resentment if one student causes the group to lose reinforcement).
- ✗ Unfair influence in dependent contingencies (e.g., relying on one student's success).
- ✗ Unequal participation (e.g., stronger performers carrying the group in interdependent contingencies).

Solutions to Common Challenges

- Use a hybrid approach (e.g., combining independent and interdependent contingencies).
- Provide individual reinforcement alongside group contingencies.
- Modify reinforcement schedules to ensure fair opportunities.

### **G.15. Design and evaluate procedures to promote stimulus and response generalization.**

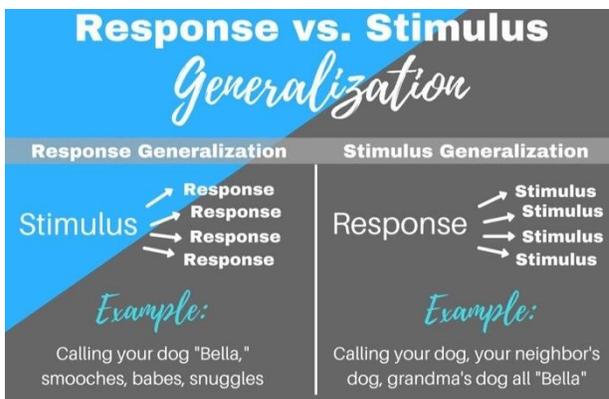
## Designing and Evaluating Procedures to Promote Stimulus and Response Generalization in ABA

### Introduction

Generalization is a critical goal in Applied Behavior Analysis (ABA) that ensures learners apply newly acquired skills across different settings, people, stimuli, and variations of a response. Without proper generalization, skills may remain confined to the training environment, limiting their functional use in real-life situations.

This article explores how to design, implement, and evaluate procedures to promote both stimulus and response generalization effectively.

### 1. Understanding Stimulus and Response Generalization



#### A. Stimulus Generalization

**Definition:** When a behavior learned in one context occurs in the presence of new, untrained stimuli that share similar properties.

- **Example:** A child learns to say “dog” when shown a Labrador and later calls a Poodle a “dog” without direct training.

#### B. Response Generalization

**Definition:** When a learner produces a variety of functionally equivalent responses to the same stimulus or situation.

- **Example:** A child learns to say “hello” when greeting and later generalizes by saying “hi,” “hey,” or waving without being explicitly taught these variations.

Both stimulus and response generalization are essential for functional skill development and long-term independence.

**STIMULUS GENERALIZATION**  
Stimulus generalization occurs when a person or animal starts responding to one stimulus, then multiple stimuli, in a similar manner.

**OVERVIEW**  
Response and stimulus generalization are often confused:

- **Response generalization:** when the same stimulus may evoke various variations of responses.
- **Stimulus generalization:** refers to different but similar stimuli evoking the same response.

**EXAMPLES**

- **Dog's Response:** A dog may respond to a flute or bell in the same way it has been trained to respond to a whistle.
- **PTSD:** A war veteran may feel heightened trauma when exposed to fireworks because they sound and look like explosions experienced in war.

**RESPONSE GENERALIZATION**  
Response generalization refers to situations where one stimulus can lead to a range of different responses upon each exposure.

**OVERVIEW**  
Response and stimulus generalization are often confused:

- **Response generalization:** when the same stimulus may evoke various variations of responses.
- **Stimulus generalization:** refers to different but similar stimuli evoking the same response.

**EXAMPLES**

- **Getting Mom's Attention:** An infant gets their mother's attention by fake crying, making a loud shrieking noise, or banging an object on the table.
- **Eating Cereal:** A toddler was taught to use a spoon to eat cereal. The next day, the child spontaneously uses their small toy shovel to eat cereal.

## 2. Designing Procedures to Promote Generalization

To maximize generalization, ABA practitioners should systematically implement specific strategies during instruction.

### A. Strategies to Promote Stimulus Generalization

1. Train in Multiple Settings
  - Conduct teaching sessions in different environments to prevent skills from being context-bound.
  - Example: Teaching social skills in a classroom, playground, and at home.
2. Use Multiple Exemplars
  - Teach the skill using varied stimuli to ensure the learner responds appropriately to different but related items.
  - Example: Teaching “cup” using different colors, sizes, and materials of cups.
3. Vary Instructional Materials

- Present the same lesson using different types of stimuli to avoid over-reliance on a specific cue.
- Example: Teaching letter recognition with flashcards, books, and digital screens.
- 4. Incorporate Natural Stimuli and Cues
  - Use materials and situations found in the learner’s natural environment.
  - Example: Teaching money skills with real coins and bills rather than toy money.
- 5. Teach Loosely (Vary Instructions and Prompts)
  - Use slight variations in instructions, prompts, and environmental conditions.
  - Example: Instead of always saying, “Point to red,” also use “Find the red one” or “Show me something red.”
- 6. Reinforce Generalization
  - Provide reinforcement when the learner responds correctly to new stimuli without direct training.
  - Example: Praising a student who correctly greets a new teacher using a learned skill.

#### B. Strategies to Promote Response Generalization

1. Teach Multiple Response Variations
  - Encourage learners to use different ways to achieve the same outcome.
  - Example: Teaching a child to greet using verbal greetings, handshakes, high-fives, and smiles.
2. Use Response Induction (Shaping)
  - Reinforce slight variations of the response over time to encourage flexibility.
  - Example: If a child learns to say “Help,” gradually reinforce “Can you help me?” or “I need help, please.”
3. Provide Opportunities for Free-Operant Responding
  - Allow learners to practice responses naturally without rigid trial-based instruction.
  - Example: Encouraging spontaneous social interactions in a playgroup.

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### 4. Use Multiple Models and Instructors

- Expose learners to different people demonstrating the same response.
- Example: Teaching greetings by practicing with teachers, peers, and family members.

### 5. Promote Self-Generated Responses

- Encourage learners to create their own variations of a response instead of relying solely on modeled behavior.
- Example: A child who learns to say, “Nice to meet you” independently modifies it to, “It’s great to meet you.”

## 3. Evaluating the Effectiveness of Generalization Procedures

To ensure that generalization procedures are successful, ABA practitioners must collect and analyze data systematically.

### A. Data Collection Methods

#### 1. Generalization Probes

- Conduct untrained trials in new settings or with new people to see if the learner applies the skill independently.
- Example: Testing if a child can ask for help at home after learning it in therapy.

#### 2. Maintenance Data

- Assess whether the learner continues using the skill weeks or months after training has ended.
- Example: Checking if a child still ties their shoes independently three months after learning.

#### 3. Percent of Generalized Responses

- Measure how often the learner applies the behavior to new stimuli compared to controlled settings.
- Example: If a student correctly identifies new dog breeds 7 out of 10 times, their stimulus generalization rate is 70%.

#### 4. Latency Recording

- Measure how long it takes for the learner to generalize a skill to a new context.

- Example: How quickly does a child transfer social skills from therapy to the school cafeteria?

#### B. Evaluating Success and Making Adjustments

A generalization procedure is effective if:

- ✓ The learner applies the target behavior in new settings and with new people.
- ✓ The skill is maintained over time without direct teaching.
- ✓ The learner can demonstrate different variations of the response.

If generalization is limited, consider:

- Expanding training stimuli (e.g., using more item variations).
- Increasing reinforcement for natural generalization.
- Providing additional practice in different settings.

#### 4. Practical Examples of Generalization Strategies in ABA

##### Example 1: Stimulus Generalization for Teaching Colors

Goal: The learner correctly identifies colors in different contexts.

Implementation:

- Use flashcards, real-life objects, and clothing to teach colors.
- Conduct sessions inside and outside the classroom.
- Have multiple instructors reinforce color identification.
- Reinforce correct responses when untrained objects are labeled correctly.

Evaluation:

- Generalization probe: Present new objects (e.g., a red apple) and see if the learner correctly labels them.
- Maintenance check: Test if the skill remains after one month without direct teaching.

##### Example 2: Response Generalization for Requesting Help

Goal: The learner uses different phrases to request help.

Implementation:

- Teach multiple variations:
- “Help, please.”
- “I need help.”
- “Can you help me?”
- Reinforce spontaneous variations during daily activities.
- Allow the child to choose how to phrase their request.

Evaluation:

- Track how many variations of requests the learner uses.
- Monitor whether the child generalizes help-seeking to new environments (e.g., school, home).

5. Conclusion

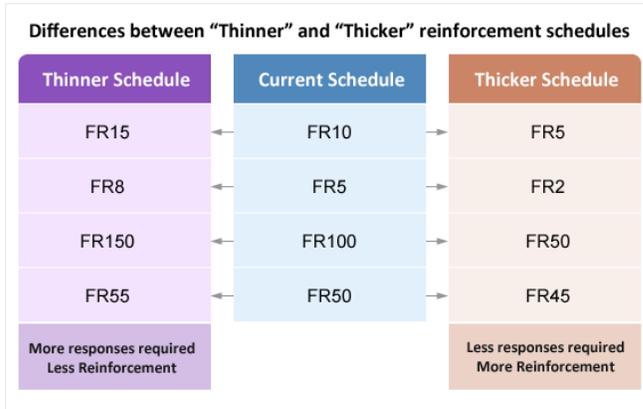
Promoting stimulus and response generalization is essential for real-world skill application in ABA. By using strategies such as training in multiple environments, varying stimuli, reinforcing response flexibility, and incorporating generalization probes, behavior analysts ensure that skills extend beyond training sessions.

Consistently evaluating generalization effectiveness through data collection and analysis allows for modifications to improve long-term behavior change and independent skill use across all areas of life.

**G.16. Design and evaluate procedures to maintain desired behavior change following intervention (e.g., schedule thinning, transferring to naturally occurring reinforcers).**

In applied behavior analysis (ABA), maintaining desired behavior change following an intervention is crucial for ensuring that the effects of the intervention are long-lasting and generalizable to different environments. Here are some strategies to design and evaluate procedures for maintaining behavior change:

## 1. Schedule Thinning



**Definition:** Schedule thinning involves gradually decreasing the frequency of reinforcement after the desired behavior has been established. This helps in shifting the reliance from continuous reinforcement to a more natural, sporadic reinforcement schedule.

**Implementation:**

- Start with Continuous Reinforcement: Initially, reinforce the desired behavior consistently to establish a strong connection.
- Gradual Thinning: Move to a fixed-ratio or variable-ratio schedule. For example, if the behavior is reinforced every time it occurs, switch to reinforcing after every 2, then 3, then 5 occurrences.
- Monitor Behavior: Continuously assess the individual's responses to ensure that the behavior remains stable with the thinning schedule.

**Evaluation:**

**Performance Monitoring:** Keep track of the frequency of the desired behavior and any instances of regression.

- Data Analysis: Use visual analysis (e.g., charts or graphs) to compare behavior before, during, and after schedule thinning.

## 2. Transferring to Naturally Occurring Reinforcers

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**Definition:** This strategy involves identifying and utilizing reinforcers that exist in the individual's natural environment, allowing behaviors to be maintained by external, everyday rewards instead of programmed reinforcers.

**Implementation:**

**Identify Natural Reinforcers:** Work with the individual and caregivers to discover what naturally reinforces their behavior (e.g., social praise, leisure activities).

- **Teach Skills in Context:** Introduce the behavior change within natural contexts where these reinforcers are available.

**Gradual Withdrawal of Intervention:** Slowly reduce artificial reinforcers while promoting the use of natural reinforcers.

**Evaluation:**

**Behavior Tracking:** Observe whether the individual maintains the desired behavior when programmed reinforcers are removed.

**Stakeholder Feedback:** Gather input from parents, teachers, or caregivers to assess whether the individual is responding favorably to natural reinforcers.

### 3. Generalization and Maintenance Sessions

**Implementation:**

- **Generalization Training:** Teach the individual to apply the learned behavior in various settings, with different people, and under various conditions.

- **Follow-up Sessions:** Schedule periodic check-ins to reinforce the behavior in natural environments without using programmed reinforcement.

**Evaluation:**

- **Behavioral Cues:** Assess ownership of the behavior by observing its occurrence in different contexts.

Retention Tests: After a period without reinforcement, evaluate if the individual can still demonstrate the desired behavior.

## Conclusion

Maintaining behavior change requires a thoughtful approach that balances reinforcement schedules and leverages naturally occurring motivators. Regular monitoring and data collection are critical for evaluating the effectiveness of these strategies, ensuring that individuals can maintain their progress over time. By emphasizing the transfer to natural reinforcers and involving stakeholders, ABA practitioners can promote lasting behavior change beyond the intervention phase.

### **G.17. Design and evaluate positive and negative punishment (e.g., time-out, response cost, overcorrection).**

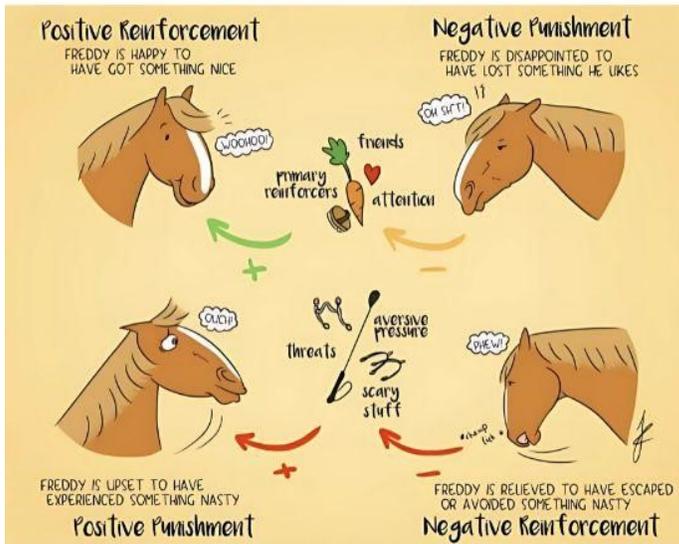
#### Designing and Evaluating Positive and Negative Punishment in ABA

##### Introduction

Punishment procedures in Applied Behavior Analysis (ABA) are used to decrease the likelihood of a problem behavior occurring in the future. While reinforcement-based strategies are always preferred, punishment procedures may be necessary in certain cases where behaviors are dangerous, disruptive, or resistant to reinforcement-based interventions.

This article explores how to design, implement, and evaluate positive and negative punishment procedures, including time-out, response cost, and overcorrection, while ensuring ethical considerations and effectiveness.

##### 1. Understanding Positive and Negative Punishment



### A. Positive Punishment

Definition: Adding an aversive stimulus following a behavior to reduce its occurrence in the future.

- Example: A child touches a hot stove and experiences pain, reducing the likelihood of touching it again.
- Common ABA Applications: Overcorrection, contingent exercise, reprimands.

### B. Negative Punishment

Definition: Removing a preferred stimulus following a behavior to reduce its occurrence in the future.

- Example: A teenager loses phone privileges for breaking curfew, reducing future curfew violations.
- Common ABA Applications: Time-out, response cost.

Punishment should always be implemented ethically, with clear guidelines, data collection, and reinforcement for alternative behaviors to ensure long-term behavior change.

## 2. Designing Positive and Negative Punishment Procedures

When designing punishment procedures, ABA practitioners must:

- ✓ Clearly define the target behavior.
- ✓ Select a least-restrictive, ethically sound procedure.

✓ Ensure punishment is immediate, contingent, and consistent.

✓ Reinforce alternative behaviors to encourage positive replacement behaviors.

## A. Positive Punishment Procedures

### 1. Overcorrection

A procedure in which the learner must engage in effortful behavior related to the problem behavior.

Types of Overcorrection:

- Restitution Overcorrection: The learner restores the environment to a better condition than before.
- Example: A student who throws trash on the floor must pick up their trash and clean the entire area.
- Positive Practice Overcorrection: The learner must repeatedly practice the correct behavior.
- Example: A child who runs in the hallway must walk back and forth multiple times.

Design Considerations:

- Ensure overcorrection is logically related to the misbehavior.
- Avoid excessive physical or emotional stress.
- Combine with reinforcement for appropriate behaviors.

Evaluation:

- Measure reductions in problem behavior.
- Assess compliance with overcorrection.
- Track generalization and maintenance of desired behaviors.

### 2. Contingent Exercise

Requiring the learner to engage in a non-preferred physical activity contingent on the problem behavior.

- Example: A student who refuses to clean up after lunch must do five extra minutes of table-wiping.

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Evaluation:

- Track whether the problem behavior decreases over time.
- Assess whether contingent exercise is effective without excessive distress.

### 3. Reprimands

A verbal statement delivered immediately after a problem behavior.

- Example: A teacher sternly says, “No talking during the test,” when a student speaks.

Evaluation:

- Ensure reprimands are brief, direct, and not overused.
- Track long-term behavior reduction without needing frequent reprimands.

## B. Negative Punishment Procedures

### 1. Time-Out from Reinforcement

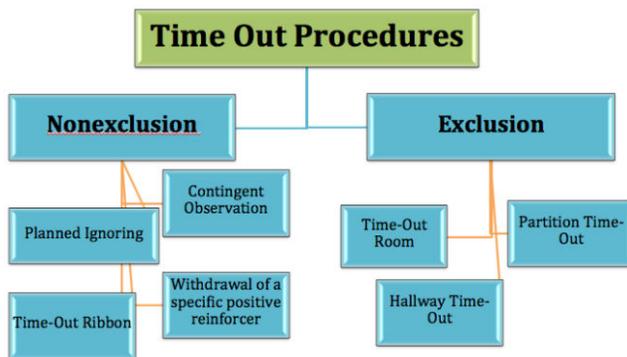
A procedure in which the learner temporarily loses access to preferred stimuli following a problem behavior.

Types of Time-Out:

1. Non-Exclusionary Time-Out – The learner remains in the setting but loses reinforcement.
  - Example: A child in class moves to a designated “calm-down” chair but stays in the room.
2. Exclusionary Time-Out – The learner is removed from the environment.
  - Example: A child is sent to a supervised time-out room for aggressive behavior.

## Extinction vs. response cost & time-out

	Procedure	Process or Results
Extinction	Stop giving reinforcer maintaining the behavior	Response frequency decreases Extinction burst & spontaneous recovery
Response Cost	Contingent loss of reinforcer currently possessed	Rate may decrease rapidly
Time-out	Contingent removal of access to a reinforcer	Rate may decrease rapidly



### Design Considerations:

- Ensure time-out is immediate, brief, and clearly explained.
- Avoid reinforcing the behavior during time-out (e.g., allowing escape from demands).
- Reinforce appropriate behaviors outside of time-out.

### Evaluation:

- Measure frequency and duration of time-outs.
- Assess whether problem behaviors decrease over time.
- Evaluate if time-out is being implemented consistently and correctly.

### 2. Response Cost

A procedure in which a learner loses a reinforcer after engaging in a problem behavior.

- Example: A student loses 5 minutes of recess for interrupting class.

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### Design Considerations:

- The removed reinforcer should be valuable but not overly punitive.
- Clearly define how much reinforcement is lost per infraction.
- Avoid removing all reinforcement, which can lead to frustration.

### Evaluation:

- Track whether response cost leads to reduced problem behavior.
- Ensure reinforcement loss does not trigger new problem behaviors.
- Use reinforcement systems alongside response cost (e.g., token economy).

### 3. Evaluating the Effectiveness of Punishment Procedures

To ensure punishment procedures are ethical and effective, ABA practitioners must:

#### A. Data Collection Methods

##### 1. Frequency Recording

- Measure how often the problem behavior occurs before and after punishment is introduced.

- Example: Track tantrums per day before implementing time-out.

##### 2. Duration Recording

- Measure how long the behavior lasts before and after intervention.

- Example: If a child's tantrums last 10 minutes before response cost, assess whether they decrease over time.

##### 3. Latency Recording

- Measure the time between a warning and the behavior occurring.

- Example: A student waits longer before interrupting after response cost is implemented.

##### 4. Generalization and Maintenance Probes

- Assess whether behavior improvement extends to new settings.

- Example: If time-out is effective in class, does it reduce misbehavior at recess?

#### B. Criteria for Ethical and Effective Punishment Use

- ✓ The procedure reduces the problem behavior.
- ✓ Reinforcement is provided for alternative, appropriate behaviors.
- ✓ The learner does not exhibit new problem behaviors as a side effect.
- ✓ Punishment is faded out once behavior improves.
- ✓ Data supports consistent, long-term success.

If punishment is ineffective or produces negative effects, consider:

- Increasing reinforcement for appropriate behaviors.
- Switching to a different punishment procedure.
- Modifying the intensity or frequency of punishment delivery.

#### 4. Ethical Considerations in Using Punishment

ABA emphasizes the least restrictive, reinforcement-based interventions first. Punishment should be:

- ✓ Ethically justified – Used only when reinforcement strategies alone are insufficient.
- ✓ Monitored closely – Regular data collection is required.
- ✓ Part of a comprehensive behavior plan – Always paired with positive reinforcement strategies.
- ✓ Reviewed by supervisors and caregivers – Especially if punishment involves exclusionary time-out or response cost.

#### **G.18. Evaluate emotional and elicited effects of behavior change procedures.**

Evaluating Emotional and Elicited Effects of Behavior Change Procedures in ABA

##### Introduction

Behavior change procedures in Applied Behavior Analysis (ABA) can have both intended and unintended effects on learners. While interventions are designed to promote positive behavioral outcomes, they may also evoke emotional reactions and elicited responses that impact learning, generalization, and well-being.

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This article explores how to evaluate the emotional and elicited effects of behavior change procedures, ensuring interventions remain effective, ethical, and socially valid.

### 1. Understanding Emotional and Elicited Effects in Behavior Change

#### A. Emotional Effects

- Definition: Emotional responses that arise as a byproduct of a behavior change procedure.
- Examples: Frustration, anxiety, happiness, excitement, or avoidance behaviors.

#### B. Elicited Effects

- Definition: Reflexive or automatic responses triggered by antecedents, consequences, or specific interventions.
- Examples:
  - Aggression following extinction procedures.
  - Escape attempts when implementing non-preferred tasks.

Both emotional and elicited effects must be monitored and managed to maintain ethical and effective interventions.

### 2. Evaluating Emotional and Elicited Effects in ABA Procedures

Behavior analysts must systematically assess and address emotional and elicited responses during behavior change programs.

A. Common ABA Procedures That May Evoke Emotional or Elicited Effects

Behavior Change Procedure	Potential Emotional/Elicited Effects
Extinction (withholding reinforcement for problem behavior)	Extinction burst (increase in behavior before decrease), frustration, aggression, crying
Negative punishment (e.g., time-out, response cost)	Resistance, emotional outbursts, avoidance, noncompliance
Overcorrection (positive punishment procedure)	Irritation, escape behaviors, defiance
Differential reinforcement	Frustration if reinforcement criteria are unclear or too strict
Shaping	Excitement, motivation, or occasional frustration when expectations increase

Behavior analysts must evaluate whether these effects hinder progress, reduce motivation, or negatively impact well-being.

B. Data Collection Methods to Assess Emotional and Elicited Effects

1. Behavioral Observation and Frequency Recording
  - Track aggression, avoidance, crying, or frustration before, during, and after intervention.
  - Example: If a child exhibits tantrums during extinction, collect data on frequency and duration.
2. Latency Recording
  - Measure time between the intervention and emotional response.
  - Example: If a learner engages in escape behavior within seconds of a time-out, latency recording can help determine how quickly aversive effects occur.
3. Duration Measurement
  - Monitor how long an emotional response persists after an intervention.
  - Example: A child screams for 3 minutes when reinforcement is withheld.
4. Physiological Indicators (if applicable)

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- Indirect signs of stress, such as fidgeting, rapid breathing, or withdrawal behaviors.
  - Example: A learner begins avoiding therapy sessions after a specific intervention is introduced.
5. Self-Report and Caregiver Input
- Use interviews, rating scales, and questionnaires to evaluate emotional responses.
  - Example: Teachers report a child becoming anxious before ABA sessions after introducing a response cost system.

### 3. Managing and Mitigating Emotional and Elicited Effects

If negative emotional or elicited effects are observed, ABA practitioners should:

#### A. Modify Reinforcement and Prompting Strategies

- ✓ Use reinforcement-based alternatives before considering punishment.
- ✓ Provide clear reinforcement contingencies to avoid frustration.
- ✓ Gradually fade reinforcement schedules to prevent sudden emotional responses.

#### B. Adjust Extinction and Punishment Procedures

- ✓ If extinction bursts occur, reinforce alternative behaviors rather than allowing frustration to build.
- ✓ Use differential reinforcement to shape replacement behaviors instead of sudden removal of reinforcement.
- ✓ Ensure response cost or time-out is not overly severe, avoiding unnecessary distress.

#### C. Implement Emotional Regulation and Coping Strategies

- ✓ Teach replacement behaviors to handle frustration (e.g., deep breathing, asking for a break).
- ✓ Use visual supports to help learners predict consequences and outcomes.
- ✓ Introduce functional communication training (FCT) for individuals who struggle to express emotions verbally.

D. Modify Instructional Strategies to Reduce Negative Emotional Responses

- ✓ Shaping instead of punishment to minimize frustration.
- ✓ Errorless learning to reduce failure-related distress.
- ✓ Allow learners to have choices in activities to maintain engagement.

4. Evaluating the Success of Modifications

Once changes are made, ABA practitioners should:

- ✓ Reassess behavioral data (e.g., frequency of frustration behaviors, latency to aversive responses).
- ✓ Conduct generalization probes to see if emotional responses decrease across settings.
- ✓ Gather feedback from caregivers and teachers on behavioral and emotional progress.

If negative emotional or elicited effects persist, consider:

- ✗ Switching to a less aversive intervention.
- ✗ Adjusting reinforcement schedules to increase motivation.
- ✗ Conducting a functional behavior assessment (FBA) to determine if underlying triggers are causing emotional responses.

5. Practical Case Study: Evaluating Emotional and Elicited Effects of Behavior Change Procedures

Scenario: Addressing Tantrums through Extinction

# OPERANT EXTINCTION

**Behavior fades when reward ends.**



Ever feel stuck trying to stop a behavior that just won't go away? In ABA therapy, we use **operant extinction**. If a child throws tantrums for candy, stop giving candy during tantrums. The behavior will eventually stop because it no longer "works."

Be aware of the **extinction burst**, where the behavior temporarily increases before it decreases. This is a normal part of the process, so don't be discouraged. Stay consistent and teach new, positive behaviors, like asking nicely instead of tantrums. For example, you can encourage the child to use words or gestures to request what they want. This helps them learn more appropriate ways to communicate their needs.

Target Behavior: A child engages in tantrums to access preferred items.

Intervention: Extinction procedure (withholding reinforcement for tantrums).

Observed Emotional and Elicited Effects:

- Week 1: Extinction burst—tantrums increased from 3 to 6 per day.
- Week 2: Child became aggressive toward peers.
- Week 3: Child began avoiding therapy sessions.

Evaluation and Adjustments:

- ✓ Implemented Functional Communication Training (FCT) to teach the child to request items appropriately.
- ✓ Used Differential Reinforcement of Alternative Behavior (DRA) to reinforce calm requests instead of tantrums.
- ✓ Gradually faded extinction rather than abruptly removing reinforcement.

Outcome:

After four weeks, tantrums reduced by 80%, aggression stopped, and the child remained engaged in therapy.

## 6. Ethical Considerations in Managing Emotional and Elicited Effects

ABA practitioners must always ensure that behavior change procedures:

- ✓ Follow ethical guidelines from the BACB Ethics Code.
- ✓ Prioritize reinforcement over punishment whenever possible.
- ✓ Use the least restrictive interventions first.
- ✓ Continuously monitor and adjust interventions to minimize distress.

If an intervention causes excessive emotional distress, behavior analysts must:

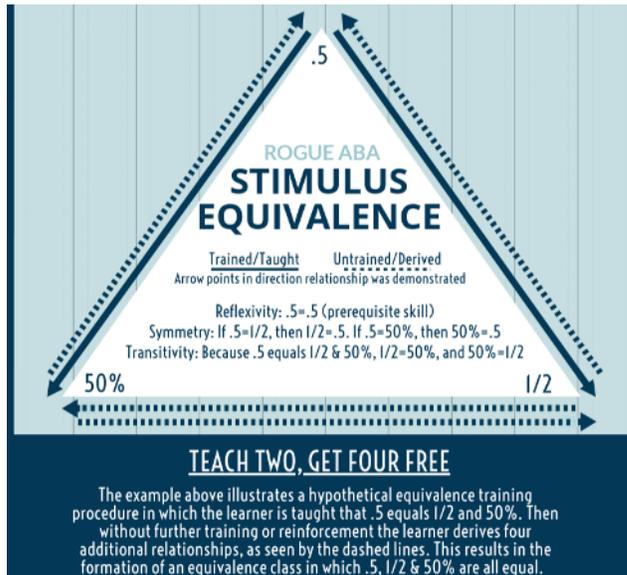
- ✗ Discontinue or modify the procedure.
- ✗ Implement alternative reinforcement-based strategies.
- ✗ Consult BCBAAs, caregivers, and interdisciplinary teams for ethical decision-making.

## 7. Conclusion

Evaluating emotional and elicited effects of behavior change procedures is essential to ensure ethical, effective, and socially valid interventions in ABA. By systematically collecting data, modifying interventions, and incorporating reinforcement-based strategies, practitioners can reduce negative emotional reactions while promoting meaningful and lasting behavior change.

Through continuous evaluation and ethical decision-making, ABA professionals can maintain a supportive and effective learning environment for all individuals.

**G.19. Design and evaluate procedures to promote emergent relations and generative performance.**



Designing and Evaluating Procedures to Promote Emergent Relations and Generative Performance in ABA

Introduction

In Applied Behavior Analysis (ABA), promoting emergent relations and generative performance is essential for efficient skill acquisition and generalization. Instead of teaching every individual response separately, ABA practitioners design interventions that encourage learners to derive new responses from previously learned relationships.

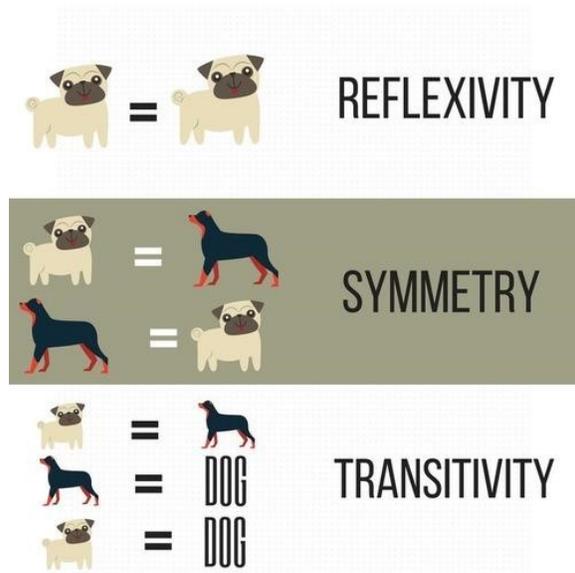
This article explores how to design and evaluate procedures that promote emergent relations (untrained responses that emerge based on prior learning) and generative performance (flexible, novel problem-solving without direct instruction).

1. Understanding Emergent Relations and Generative Performance

A. Emergent Relations

- Definition: Untrained behaviors that arise due to previously taught relationships between stimuli.

- Example: A child learns that  $A = B$  (e.g., “dog” = □□) and  $B = C$  (e.g., □□ = “Perro” in Spanish). Later, the child spontaneously derives  $A = C$  (i.e., “dog” = “Perro”), even though this relation was never directly taught.



## B. Generative Performance

- Definition: The ability to apply learned skills in novel contexts or solve new problems without direct teaching.
- Example: A child who learns how to add single-digit numbers later generalizes the rule to two-digit addition without direct instruction.



**UNLOCKING  
STIMULUS  
EQUIVALENCE**

**WHAT IS IT?**  
Equivalence describes the emergence of accurate responding to untrained and nonreinforced stimulus-stimulus relations following the reinforcement of responses to some stimulus-stimulus relations. (Cooper et al., 2007)

**REFLEXIVITY**  
Prerequisite to stimulus equivalence, generalized identity matching.  
 $A=A$

**SYMMETRY**  
After training of a relationship in one direction, the organism derives the untrained relationship in the reverse direction  
**If  $A=B$ , then  $B=A$  & if  $B=C$ , then  $C=B$**

**TRANSITIVITY**  
After training of two relationships, where two different stimuli are related to a single stimulus, the organism derives a third relationship.  
**If  $A=B$  &  $B=C$ , then  $C=A$  &  $A=C$**

By designing ABA interventions that promote emergent relations and generative performance, practitioners enhance learning efficiency and real-world adaptability.

## 2. Designing Procedures to Promote Emergent Relations

## THE BCBA EXAM STUDY GUIDE

ABA practitioners use several evidence-based instructional strategies to encourage emergent responding.

### A. Stimulus Equivalence Training

- Goal: Teach learners to derive untrained relationships between stimuli.
- Key Relations Taught:
  1. Reflexivity –  $A = A$  (e.g., matching identical objects).
  2. Symmetry – If  $A = B$ , then  $B = A$  (e.g., if “dog” = □□, then □□ = “dog”).
  3. Transitivity – If  $A = B$  and  $B = C$ , then  $A = C$  (e.g., if “dog” = □□ and □□ = “Perro,” then “dog” = “Perro”).

#### Implementation Steps:

1. Identify the stimuli (e.g., written words, pictures, spoken words).
2. Train a subset of relations (e.g.,  $A = B$ ,  $B = C$ ).
3. Test for emergent relations (e.g., Does  $A = C$  emerge without direct teaching?).
4. Reinforce correct emergent responses.

#### Example: Teaching Vocabulary Through Stimulus Equivalence

- Train: “Apple” = □□ (spoken word to picture)
- Train: □□ = Written word “apple”
- Test: Can the learner now relate “Apple” = “apple” without direct teaching?

### B. Relational Frame Theory (RFT) and Derived Relations

- Goal: Teach learners to establish flexible, contextually controlled relationships between stimuli.
- Key Relations:
  1. Same (e.g., “cat” is the same as “kitten”).
  2. Opposite (e.g., “hot” vs. “cold”).
  3. More/Less (e.g., “5 is more than 3”).

#### Implementation Steps:

1. Train relational frames explicitly (e.g., teaching “bigger” vs. “smaller” across multiple exemplars).
2. Vary contextual cues (e.g., different sentence structures for relational concepts).
3. Test for generalization to novel words and concepts.

Example: Teaching Relational Concepts

- Train: “Bigger” relation using blocks of different sizes.
- Extend: Apply to animals, numbers, and abstract concepts (e.g., “Happiness is bigger than sadness”).

C. Multiple Exemplar Training

- Goal: Ensure learners generalize skills by providing many examples across contexts.
- Example: If teaching past tense, use multiple examples:
  - “Jump → Jumped”
  - “Run → Ran”
  - “Eat → Ate”

By training across different words, people, and contexts, learners generate new responses without direct instruction.

D. Matrix Training

- Goal: Systematically arrange teaching examples so that untrained combinations emerge.
- Example: Teaching color + shape combinations:
  - Trained: Red square, blue triangle
  - Emergent: Red triangle, blue square

3. Designing Procedures to Promote Generative Performance

A. Rule-Governed Behavior

- Goal: Teach learners generalized problem-solving strategies rather than rote responses.
- Example: Teaching a child to follow a rule-based pattern:

## THE BCBA EXAM STUDY GUIDE

- If  $2 + 2 = 4$ , then  $2 + 3$  must equal 5, without direct teaching.

### B. Errorless Learning & Prompt Fading

- Goal: Minimize frustration while ensuring correct responding.
- Method: Use most-to-least prompting to introduce new skills while avoiding errors.
- Example: Teaching spelling words by first providing full verbal models and gradually fading them.

### C. Functional Communication Training (FCT)

- Goal: Teach learners multiple ways to communicate needs, encouraging flexibility.
- Example: A child learns to request help using:
  - Verbal speech
  - Picture Exchange Communication (PECS)
  - Sign language

## 4. Evaluating the Effectiveness of Procedures to Promote Emergent Relations and Generative Performance

### A. Data Collection Methods

Method	Purpose
Probes for Emergent Responses	Test for untrained relations (e.g., $A = C$ in stimulus equivalence).
Generalization Probes	Assess whether skills extend to new settings, stimuli, and people.
Fluency and Rate of Learning	Measure how quickly new responses emerge compared to baseline.
Maintenance Checks	Ensure skills persist over time without direct reinforcement.

### B. Success Criteria

- ✓ Learner demonstrates untrained responses (e.g., derives new word relations).

- ✓ Skills generalize to different settings, stimuli, and people.
- ✓ Learner generates new responses without direct teaching.
- ✓ Minimal retraining is required after initial instruction.

If emergent relations do not occur, consider:

- Providing additional multiple exemplar training.
- Using more explicit reinforcement for derived relations.
- Ensuring sufficient training trials and response opportunities.

## 5. Practical Case Study: Teaching Generative Language Skills

Scenario: Expanding a Child's Vocabulary

- Goal: Teach word-object relations that promote emergent language.
- Procedure: Use stimulus equivalence training:
- Train: "Dog" = □□ (spoken word to picture).
- Train: □□ = Written word "dog".
- Test: Can the child match "Dog" = "dog" without direct instruction?

Evaluation:

- Pre-test: Child does not match words to objects.
- Post-test: Child correctly identifies new word-object relations without training.
- Outcome: Successful stimulus equivalence and generative language learning.

Effective evaluation methods, including generalization probes, fluency data, and maintenance checks, help practitioners refine interventions to maximize long-term skill development and independence.

## THE BCBA EXAM STUDY GUIDE

Instructions:

Choose the best answer for each question. The answer key is provided at the bottom.

**1. What is the primary goal of behavior-change procedures in ABA?**

- A) To eliminate all unwanted behaviors
- B) To control the individual's actions
- C) To increase, decrease, or maintain specific behaviors through systematic interventions
- D) To use punishment to decrease undesired behaviors

**2. Which of the following is an example of differential reinforcement of alternative behavior (DRA)?**

- A) Reinforcing a child for raising their hand instead of calling out in class
- B) Ignoring a behavior until it stops
- C) Reinforcing behavior regardless of what the child does
- D) Giving reinforcement at random intervals

**3. Which behavior-change procedure involves reinforcing the absence of a problem behavior for a specified time?**

- A) Differential Reinforcement of Other Behavior (DRO)
- B) Differential Reinforcement of Low Rates (DRL)
- C) Differential Reinforcement of High Rates (DRH)
- D) Differential Reinforcement of Alternative Behavior (DRA)

**4. What is an example of shaping?**

- A) Reinforcing successive approximations of a target behavior
- B) Extinguishing a behavior immediately
- C) Punishing errors to force correct responses
- D) Reinforcing only the final, correct response

**5. Which of the following best defines chaining?**

- A) Teaching individual behaviors separately without connection
- B) Reinforcing behaviors in a sequential order to form a complex skill

- C) Punishing errors in a task sequence
- D) Only reinforcing the final step of a sequence

**6. Which type of chaining involves teaching the last step first and moving backward through the sequence?**

- A) Forward chaining
- B) Backward chaining
- C) Total task chaining
- D) Task analysis

**7. Which of the following best describes discrete trial training (DTT)?**

- A) A structured teaching method that breaks skills into small, teachable components
- B) A procedure that only uses naturalistic teaching methods
- C) A form of punishment-based instruction
- D) A reinforcement schedule that discourages responding

**8. What is a key component of natural environment teaching (NET)?**

- A) Teaching skills in a structured, drill-like format
- B) Using a child's natural interests to facilitate learning in real-life settings
- C) Punishing problem behaviors that interfere with learning
- D) Avoiding reinforcement to promote independence

**9. Which of the following describes task analysis?**

- A) Breaking down complex behaviors into smaller, teachable steps
- B) Ignoring all problem behaviors
- C) Reinforcing only spontaneous behaviors
- D) Using punishment to suppress problem behavior

**10. Which reinforcement schedule is best for teaching new skills?**

- A) Variable Ratio (VR)
- B) Fixed Interval (FI)
- C) Continuous Reinforcement (CRF)

D) Variable Interval (VI)

**11. What is the main purpose of functional communication training (FCT)?**

- A) To eliminate all forms of communication deficits
- B) To teach individuals to use appropriate communication instead of problem behaviors
- C) To provide reinforcement only when a problem behavior occurs
- D) To discourage verbal communication in favor of nonverbal methods

**12. Which of the following is an example of prompt fading?**

- A) Using the same level of prompts indefinitely
- B) Gradually reducing the level of assistance until the individual responds independently
- C) Ignoring all incorrect responses
- D) Only reinforcing behaviors with no prompts used

**13. Which is an example of an antecedent intervention?**

- A) Reinforcing appropriate behavior after it occurs
- B) Using noncontingent reinforcement to reduce motivation for problem behavior
- C) Implementing a punishment procedure
- D) Teaching a new skill after the problem behavior happens

**14. What is the primary goal of stimulus fading?**

- A) To make an individual completely dependent on prompts
- B) To gradually remove prompts so that a behavior occurs in the presence of the natural stimulus
- C) To eliminate all reinforcement
- D) To reinforce behaviors regardless of accuracy

**15. When using a token economy, what should be considered to ensure its effectiveness?**

- A) Tokens should be paired with primary or secondary reinforcers
- B) Tokens should be delivered randomly
- C) Tokens should only be used as punishment
- D) Tokens should have no value outside of sessions

**16. Which of the following is an example of a contingency contract?**

- A) A written agreement between a client and a therapist outlining behavioral expectations and consequences
- B) A verbal warning for inappropriate behavior
- C) A random reinforcement system
- D) Ignoring all inappropriate behaviors

**17. What is an example of response generalization?**

- A) A child learning to say “hello” and then independently saying “hi” in similar situations
- B) A child learning to complete a puzzle only in the presence of a therapist
- C) A behavior occurring only when reinforcement is present
- D) An individual refusing to engage in a learned skill outside of therapy

**18. What is one potential risk of using extinction?**

- A) The problem behavior may immediately disappear permanently
- B) Extinction bursts, which involve temporary increases in problem behavior
- C) An immediate increase in alternative behaviors
- D) The behavior becomes permanently reinforced

**19. How can behavior analysts increase the likelihood of maintenance of behavior change?**

- A) Train across multiple settings and with different people
- B) Use punishment procedures exclusively
- C) Keep reinforcement schedules the same indefinitely
- D) Only use discrete trial teaching (DTT)

**20. What is the primary goal of self-management interventions?**

- A) To promote independence by teaching individuals to regulate their own behavior
- B) To eliminate the need for reinforcement
- C) To replace direct instruction with punishment procedures
- D) To reduce the need for data collection in ABA

## ASSIGNMENT

Applied Supervision Assignment Plan, revised to include one required video assignment per section of the BACB 6th Edition Task List. These video tasks are designed to demonstrate applied competence and support mastery through direct modeling or verbal explanation.

### Section G: Behavior-Change Procedures

#### 1. Skill Acquisition Plan

Develop a complete plan including goals, procedures, and data sheets.

#### 2. Implement DRO or DRA with Data

Run and document a DRO or DRA procedure over multiple sessions.

#### 3. DTT Training and Evaluation

Train an RBT on discrete trial instruction and use a fidelity checklist.

#### 4. Generalization & Maintenance Planning

Identify and apply generalization and maintenance strategies to a behavior plan.

Video Assignment:

“Running a Teaching Procedure” – Record yourself conducting a skill acquisition session (e.g., DTT, NET, chaining), demonstrating implementation of prompting, reinforcement, and data collection.

### Section G

#### Primary Books

##### (Foundational Sources)

1. Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). Applied behavior analysis (3rd ed.). Pearson.

(Covers every procedure listed in Section G — Chapters 11–25 are critical.)

2. Miltenberger, R. G. (2016). *Behavior modification: Principles and procedures* (6th ed.). Cengage Learning.

(Excellent for shaping, chaining, prompting, generalization, self-management — very clear procedural examples.)

3. Pierce, W. D., & Cheney, C. D. (2017). *Behavior analysis and learning* (6th ed.). Routledge.

(Great for compound schedules, conditioned reinforcement, and advanced procedure explanations.)

## **Journal Articles**

### **(Essential Classic Studies and Reviews)**

1. Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis*, 1(1), 91–97.  
<https://doi.org/10.1901/jaba.1968.1-91>

(Outlines generalization, effectiveness, technological descriptions of procedures.)

2. Lovaas, O. I. (1987). Behavioral treatment and normal educational and intellectual functioning in young autistic children. *Journal of Consulting and Clinical Psychology*, 55(1), 3–9. <https://doi.org/10.1037/0022-006X.55.1.3>

(Application of discrete trial training, reinforcement, extinction, prompting.)

3. Horner, R. H., & McDonnell, J. (1987). Teaching generalized behavior to students with severe handicaps. *Journal of the Association for Persons with Severe Handicaps*, 12(2), 84–94. <https://doi.org/10.1177/154079698701200203>

(Generalization and maintenance strategies.)

4. Cooper, L. J., Wacker, D. P., Sasso, G., Reimers, T., & Donn, L. (1990). Using self-management procedures to improve the classroom behavior of students with learning disabilities. *Behavioral Disorders*, 15(3), 157–166.

(Self-management procedures.)

## **Webpages**

### **(Reputable, Official Sources)**

1. Behavior Analyst Certification Board (BACB). (2022). BCBA 6th Edition Task List and Content Outline.

<https://www.bacb.com/bcba-6th-edition-task-list/>

(Outlines the required knowledge about behavior-change procedures.)

2. Association for Behavior Analysis International (ABAI). (n.d.). What is Behavior Analysis?

<https://www.abainternational.org/about-us/about-behavior-analysis.aspx>

(Discusses core procedures like reinforcement and extinction.)

3. Cambridge Center for Behavioral Studies. (n.d.). Behavior Analysis: A Brief Overview.

<https://behavior.org/behavior-analysis/>

(Summarizes common ABA strategies like reinforcement, prompting, and token economies.)

4. University of West Florida (UWF) ABA Program. (n.d.). ABA Procedures and Applications.

(Often has simplified outlines of DTT, chaining, DRO, DRA, self-management, prompting systems, etc.)

## KEY DEFINITIONS SECTION G

Abolishing operation (A  
n O)

A motivating operation that decreases the reinforcing effectiveness of a stimulus, object, or event. For example, the reinforcing effectiveness of food is abolished as a result of food ingestion.

Backup reinforcers

Preferred items, activities, or privileges that participants obtain by exchanging earned tokens in a token economy.

Backward chaining

A teaching procedure in which a trainer completes all but the last behavior in a chain, which is performed by the learner, who then receives reinforcement for completing the chain. When the learner shows competence in performing the final step in the chain, the trainer performs all but the last two behaviors in the chain, the learner emits the final two steps to complete the chain, and reinforcement is delivered. This sequence is continued until the learner completes the entire chain independently.

Backward chaining with leaps ahead

A backward chaining procedure in which some steps in the task analysis are skipped; used to increase the efficiency of teaching long behavior chains when there is evidence that the skipped steps are in the learner's repertoire.

Behavior chain

## THE BCBA EXAM STUDY GUIDE

A sequence of responses in which each response produces a stimulus change that functions as conditioned reinforcement for that response and as a discriminative stimulus for the next response in the chain; reinforcement for the last response in a chain maintains the reinforcing effectiveness of the stimulus changes produced by all previous responses in the chain. Every step in the process of making a cup of tea, for example, would be considered a behavior chain; each step builds on the last.

### Chaining

Various methods for linking specific sequences of stimuli and responses to form new performances.

### Conditional discrimination

Performance in a match-to-sample procedure in which discrimination between the comparison stimuli is conditional on, or depends on, the sample stimulus present on each trial.

### Conditioned reinforcer

A stimulus change that functions as a reinforcer because of prior pairing with one or more other reinforcers. Sometimes called secondary or learned reinforcer.

### Constant time delay

A procedure for transferring stimulus control from contrived response prompts to naturally existing stimuli. After the student has responded correctly to several 0second delay trials, after which presentation of the response prompt follows the instructional stimulus by a predetermined and fixed delay (usually 3 or 4 seconds) for all subsequent trials.

### Dependent group contingency

A contingency in which reinforcement for all members of a group is dependent on the behavior of one member of the group or the behavior of a select group of members within the larger group.

### Discrete trial

Any operant whose response rate is controlled by a given opportunity to emit the response. Each discrete response occurs when an opportunity to respond exists. Discrete trial, restricted operant, and controlled operant are synonymous technical terms.

#### Discriminative stimuli ( $S^D$ )

A stimulus in the presence of which a given behavior has been reinforced and in the absence of which that behavior has not been reinforced; as a result of this history, an  $S^D$  evokes operant behavior because its presence signals the availability of reinforcement.

#### DRA (Differential Reinforcement of Alternative Behavior)

A procedure for decreasing problem behaviors in which reinforcement is delivered for a behavior that serves as a desirable alternative to the behavior targeted for reduction and withheld following instances of the problem behavior (e.g., reinforcing completion of academic worksheet items when the behavior targeted for reduction is talk-outs).

#### DRD (Differential Reinforcement of Decreasing Ratio)

A schedule of reinforcement in which reinforcement is provided at the end of a predetermined interval, contingent on the number of responses emitted during the interval being fewer than a gradually decreasing criterion based on the individual's performance in previous intervals (e.g. fewer than five responses per 5 minutes, fewer than four responses per 5 minutes, fewer than three responses per 5 minutes).

#### DRH (Differential Reinforcement of High Rates)

A schedule of reinforcement in which reinforcement is provided at the end of a predetermined interval, contingent on the number of responses emitted during the interval being greater than the gradually increasing criterion based on the individual's performance in previous intervals (e.g., more than three responses per 5 minutes, more than five responses per 5 minutes, more than eight responses per 5 minutes).

#### DRI (Differential Reinforcement of Incompatible Behavior)

A procedure for decreasing problem behaviors in which reinforcement is delivered for a behavior that is topographically incompatible with the behavior targeted for reduction and withheld following instances of the problem behavior (e.g., sitting in a seat is incompatible with walking around the room).

DRL (Differential Reinforcement of Low Rates)

A schedule of reinforcement in which reinforcement (a) follows each occurrence of the target behavior that is separated from the previous response by a minimum interresponse time (IRT), or (b) is contingent on the number of responses within a period of time not exceeding a predetermined criterion. Practitioners use DRL schedules to decrease the rate of behaviors that occur too frequently but should be maintained in the learner's repertoire.

DRO (Differential Reinforcement of Other Behavior)

A procedure for decreasing problem behaviors in which reinforcement is contingent on the absence of the problem behavior during or at specific times (i.e., momentary DRO; sometimes called differential reinforcement of zero rates of responding or omission training).

Emergent stimulus relations

Stimulus relations that are not taught directly but emerge as an indirect function of related instruction or experience. Also called derived stimulus relations.

Errorless learning

A variety of techniques for gradually transferring stimulus control with a minimum of errors.

Establishing operation (EO)

A motivating operation that increases the effectiveness of some stimulus, object, or event as a reinforcer. For example, food deprivation establishes food as an effective reinforcer.

Fixed-time schedule (FT)

A schedule for the delivery of noncontingent stimuli in which a time interval remains the same from one delivery to the next.

Forward chaining

A method for teaching behavior chains that begins with the learner being prompted and taught to perform the first behavior in the task analysis; the trainer completes the remaining steps in the

chain. When the learner shows competence in performing the first step in the chain, they are then taught to perform the first two behaviors in the chain, with the trainer completing the chain. This process is continued until the learner completes the entire chain independently.

### Free operant

Any operant behavior that results in minimal displacement of the participant in time and space. A free operant can be emitted at nearly any time; it is discrete, it requires minimal time for completion, and it can produce a wide range of response rates. Examples in ABA include (a) the number of words read during a one-minute counting period, (b) the number of hand slaps per six seconds, and (c) the number of letter strokes written in three minutes.

### Generalization

A generic term for a variety of behavioral processes and behavior change outcomes.

### Generalized behavior change

A behavior change that has not been taught directly. Generalized outcomes take one, or a combination of, three primary forms: response maintenance, stimulus/setting generalization, and response generalization. Sometimes called generalized outcome.

### Generalized imitation

A term often used when a learner imitates a wide variety of unprompted, untrained, nonreinforced modeled behaviors in different settings and situations. Generalized imitation could be considered a higher order response class in which participants imitate novel models without training and that are not predictive of reinforcement.

### Generative learning

A behavioral effect whereby previously acquired speaker and listener skills enable or accelerate the acquisition of other speaker and listener skills, without dependence on direct teaching or a history of reinforcement.

### Group contingency

A contingency in which reinforcement for all members of a group is dependent on the behavior of (a) a person within the group, (b) a select group of members within the larger group, or (c) each member of the group meeting a performance criterion.

#### Imitation training

A systematic, research-based set of procedures for teaching a non-imitative learner to imitate models of novel behaviors.

#### Independent group contingency

A contingency in which reinforcement for each member of a group is dependent on that person's meeting a performance criterion that is in effect for all members of the group.

#### Interdependent group contingency

A contingency in which reinforcement for all members of a group is dependent on each member of the group meeting a performance criterion that is in effect for all members of the group.

#### Least-to-most response prompts

A technique of transferring stimulus control in which the practitioner gives the participant an opportunity to perform the response with the least amount of assistance on each trial. The participant receives greater degrees of assistance with each successive trial without a correct response. The procedure for least-to-most prompting requires the participant to make a correct response within a set time limit (e.g., 3 seconds) from the presentation of the natural  $S^D$ . If the response does not occur within the specified time, the applied behavior analyst presents the natural  $S^D$  and a response prompt of least assistance, such as a verbal response prompt. If after the same specified time limit (e.g., another 3 seconds) the participant does not make a correct response, the analyst gives the natural  $S^D$  and another response prompt, such as a gesture. The participant receives partial or full physical guidance if the less intrusive prompt does not evoke a correct response.

#### Maintenance

Two different meanings in applied behavior analysis: (a) the extent to which the learner continues to perform the target behavior after a portion or all of the intervention has been terminated (i.e., response maintenance), a dependent variable or characteristic of behavior; and (b) a condition in

which treatment has been discontinued or partially withdrawn, independent variable or experimental condition.

#### Matching-to-sample procedure

A discrete trial procedure for investigating conditional relations and stimulus equivalence. A matching-to-sample trial begins with the participant making a response that presents or reveals the sample stimulus; next, the sample stimulus may or may not be removed, and two or more comparison stimuli are presented. The participant then selects one of the comparison stimuli. Responses that select a comparison stimulus that matches the sample stimulus are reinforced; no reinforcement is provided for responses selecting the non-matching comparison stimuli.

#### Modeling

A behavior change strategy in which learners acquire new skills by imitating demonstrations of the skills by live or symbolic models. The model shows, demonstrates, or conveys exactly the behavior the learner is expected to perform. Models can be live demonstrations or symbolic representations of the desired behavior.

#### Most-to-least response prompts

A technique of transferring stimulus control in which the practitioner physically guides the participant through the entire performance sequence, and then gradually reduces the level of assistance in successive trials. Customarily, most-to-least prompting transitions from physical guidance to visual prompts to verbal instructions, and finally to the natural stimulus without prompts.

#### Motivating operations (MOs)

An environmental variable that (a) alters (increases or decreases) the reinforcing or punishing effectiveness of some stimulus, object, or event; and (b) alters (increases or decreases) the current frequency of all behavior that has been reinforced or punished by that stimulus, object, or event.

Multiple Exemplar Training

Instruction that provides the learner with practice with a variety of stimulus conditions, response variations, and response topographies to ensure the acquisition of desired stimulus control response forms; used to promote both setting/situation generalization and response generalization.

Negative punishment

A response behavior followed immediately by the removal of a stimulus (or a decrease in the intensity of the stimulus) that results in similar responses occurring less often.

Noncontingent reinforcement (NCR)

A procedure in which stimuli with known reinforcing properties are presented on fixed-time (FT) or variable-time (VR) schedules, completely independent of behavior; often used as an antecedent intervention to reduce problem behavior.

Overcorrection

A behavior change tactic based on positive punishment in which, contingent on the problem behavior, the learner is required to engage in effortful behavior directly or logically related to fixing the damage caused by the behavior. Forms of overcorrection are restitutional overcorrection and positive practice overcorrection.

Positive practice overcorrection

A form of overcorrection in which, contingent on an occurrence of the target behavior, the learner is required to repeat a correct form of the behavior, or a behavior incompatible with the problem behavior, a specified number of times; entails an educative component.

Positive punishment

A response followed immediately by the presentation of a stimulus that decreases the future frequency of the behavior.

Progressive time delay

A procedure for transferring stimulus control from contrived response prompts to naturally existing stimuli that starts with simultaneous presentation of the natural stimulus and the response prompt (i.e., 0-second delay). The number of 0-second trials depends on the task difficulty and the functioning level of the participant. Following the simultaneous presentations, the time delay is gradually and systematically extended.

#### Response cost

The response-contingent loss of a specific number of positive reinforcers (e.g., a fine) that decreases the frequency of similar responses in the future; a form of negative punishment.

#### Response generalization

The extent to which a learner emits untrained responses that are functionally equivalent to the trained target behavior.

#### Restitutional overcorrection

A form of overcorrection in which, contingent on the problem behavior, the learner is required to repair the damage or return the environment to its original state and then to engage in additional behavior to bring the environment to a condition vastly better than it was prior to the misbehavior.

#### Schedule thinning

Changing a contingency of reinforcement by gradually increasing the response ratio or the extent of the time interval; it results in a lower rate of reinforcement per responses, time, or both.

#### Setting/situation generalization

The extent to which a learner emits the target behavior in a setting or stimulus situation that is different from the instructional setting.

#### Shaping

Using differential reinforcement to produce a series of gradually changing response classes; each response class is a successive approximation toward a terminal behavior. Members of an existing

response class are selected for differential reinforcement because they more closely resemble the terminal behavior.

### Simple discrimination

Responding is under stimulus control of a single antecedent stimulus condition; described by the three term contingency:  $S^D \mid R \quad S^{R+}$

### Stimulus equivalence

The emergence of accurate responding to untrained and non-reinforced stimulus–stimulus relations following the reinforcement of responses to some stimulus– stimulus relations. Requires successful performances on three types of probe trials – reflexivity, symmetry, and transitivity – in the absence of reinforcement. Also called equivalence-class formation.

### Stimulus fading

A method of transferring stimulus control that involves highlighting a physical dimension of a stimulus (e.g., size, color, position) to increase the likelihood of a correct response and then gradually diminishing the exaggerated dimension until the learner is responding correctly to the naturally occurring stimulus.

### Stimulus generalization

When an antecedent stimulus has a history of evoking a response that has been reinforced in its presence, the same type of behavior tends to be evoked by stimuli that share similar physical properties with the controlling antecedent stimulus.

### Task analysis

The process of breaking a complex skill or series of behaviors into smaller, teachable units; also refers to the results of this process.

Teaching enough examples

A strategy for promoting generalized behavior change that consists of teaching the learner to respond to a subset of all the relevant stimulus and response examples and then assessing the learner's performance on untrained examples.

Time delay (prompt delay)

A procedure for transferring stimulus control from contrived response prompts to naturally existing stimuli that begins with the simultaneous presentation of the natural stimulus and response prompt. After several correct responses, a delay is introduced between the stimulus and the response prompt until the student emits the unprompted correct response. Time delay is considered an "errorless learning" technique as students make few or no errors transitioning from the contrived prompt to the instructional stimulus.

Time-out (from positive reinforcement)

The immediate response-contingent withdrawal of the opportunity to earn positive reinforcement or the immediate loss of access to positive reinforcers for a specified time; a form of negative punishment.

Token economy

A behavior change system consisting of a list of target behaviors, with tokens (points or small objects) participants earn for emitting the target behaviors, and a menu of backup reinforcers (i.e., preferred items, activities, or privileges) for which participants exchange earned tokens. This system is also known as token reinforcement system.

Variable-time schedule (VT)

A schedule for the delivery of noncontingent stimuli in which the interval of time from one delivery to the next randomly varies around a given time. For example, on a VT 1-min schedule,

the delivery-to-delivery interval might range from 5 seconds to 2 minutes, but the average interval would be 1 minute.

#### Video modeling

A behavior change strategy in which the participant views a video of a model performing the target behavior and then imitates the behavior.

#### Video self-modeling

A behavior change strategy in which the participant views a video of themselves successfully performing the target behavior and then imitates their own model

## H. Selecting and Implementing Interventions

H.1. Develop intervention goals in observable and measurable terms.
H.2. Identify and recommend interventions based on assessment results, scientific evidence, client preferences, and contextual fit (e.g., expertise required for implementation, cultural variables, environmental resources).
H.3. Select socially valid alternative behavior to be established or increased when a target behavior is to be decreased.
H.4. Plan for and attempt to mitigate possible unwanted effects when using reinforcement, extinction, and punishment procedures.
H.5. Plan for and attempt to mitigate possible relapse of the target behavior.
H.6. Make data-based decisions about procedural integrity.
H.7. Make data-based decisions about the effectiveness of the intervention and the need for modification.
H.8. Collaborate with others to support and enhance client services

## H.1. Develop intervention goals in observable and measurable term

### Developing Intervention Goals in Observable and Measurable Terms in ABA

#### Introduction

In Applied Behavior Analysis (ABA), well-defined intervention goals are essential for effective behavior change. Goals should be observable, measurable, and clearly defined to ensure consistency in data collection, treatment implementation, and progress evaluation.

This article explores best practices for developing intervention goals in observable and measurable terms, ensuring they are specific, attainable, and socially significant for individuals receiving ABA services.

#### 1. Why Should Goals Be Observable and Measurable?

- ✓ Ensures Clarity – All stakeholders (therapists, caregivers, teachers) understand what behavior is being targeted.
- ✓ Allows for Data Collection – Enables objective tracking of progress.
- ✓ Facilitates Replication – Ensures consistency in intervention across different settings and therapists.
- ✓ Supports Data-Driven Decision Making – Allows for modifications based on measurable outcomes.

#### 2. Characteristics of Well-Written Intervention Goals

A strong ABA goal should include:

1. Observable Behavior – The behavior must be clearly seen or heard, not inferred.
2. Measurable Criteria – The goal must specify how progress is tracked (e.g., frequency, duration, latency).
3. Context or Conditions – The setting, materials, or circumstances under which the behavior should occur.
4. Mastery Criteria – The required level of performance for goal achievement.

Example of a Poorly Defined Goal:

✘ “The client will improve communication skills.”

Why is it weak?

- Vague – What specific communication skill?
- Unmeasurable – How is “improvement” defined?
- Lacks mastery criteria – No indication of success.

Example of a Well-Written Goal:

✔ “The client will request preferred items using a one-word verbal response or picture exchange in 80% of opportunities across three consecutive sessions.”

Why is it strong?

- Observable: We can see the client making a request.
- Measurable: Success is measured by 80% accuracy.
- Condition: Specifies response type (verbal or picture exchange).
- Mastery Criteria: Must occur across three sessions.

### 3. Steps to Develop Observable and Measurable Goals

Step 1: Identify the Target Behavior

- Select a behavior that is socially significant and aligns with the client’s needs.
- Use precise, action-based language.

✔ Examples of Observable Behaviors:

- “Initiates greetings by saying ‘Hi’ or waving.”
- “Matches identical objects in an array of five items.”
- “Waits in line without engaging in disruptive behavior for 3 minutes.”

☐☐ Non-Observable Behaviors (To Avoid):

- “Understands emotions.” (Too vague, how do you measure understanding?)
- “Will be more independent.” (What specific skill defines independence?)

Step 2: Determine How the Behavior Will Be Measured

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Decide on the data collection method that best fits the behavior.

Measurement Type	Definition	Example Goal
Frequency	Count how often behavior occurs.	“The child will raise their hand to ask a question at least 5 times per day.”
Duration	How long a behavior lasts.	“The client will engage in independent play for 10 minutes without adult prompting.”
Latency	Time between the instruction and response.	“The student will begin working on an assignment within 5 seconds of a prompt.”
Accuracy	Percentage of correct responses.	“The child will correctly identify 15 out of 20 sight words.”

### Step 3: Define the Context or Conditions

- Specify when and where the behavior should occur.
- Identify materials, people, and settings relevant to the behavior.

✓ Examples:

- “Given a visual schedule, the client will transition between activities independently.”
- “During structured play, the child will take turns with a peer in at least 3 exchanges.”

### Step 4: Set Mastery Criteria

Mastery criteria indicate when the goal is considered achieved.

Common mastery criteria include:

- ✓ Percentage of accuracy (e.g., “80% of trials”).
- ✓ Number of consecutive sessions (e.g., “across 3 sessions”).
- ✓ Frequency over time (e.g., “5 times per day for 5 days”).
- Avoid vague criteria like:
  - ✗ “Until the skill is learned” (No clear definition of mastery).
  - ✗ “Whenever needed” (Lacks measurable time frame).
- ✓ Example of Strong Mastery Criteria:
  - “The child will tie their shoes correctly in 4 out of 5 trials across two weeks.”

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### 4. Examples of Observable and Measurable ABA Goals

Domain	Well-Written Goal
Communication	“The client will label 10 common objects using a one-word vocal response in 80% of opportunities across three consecutive sessions.”
Social Skills	“During structured play, the client will take turns with a peer in at least 3 exchanges per session for 5 consecutive days.”
Behavior Reduction	“The client will reduce self-injurious behaviors (hitting head) to fewer than 2 occurrences per session across 4 weeks.”
Daily Living Skills	“The child will independently brush their teeth for at least 2 minutes in 4 out of 5 daily opportunities for 2 weeks.”
Academic Skills	“The student will correctly solve 10 out of 12 simple addition problems within 5 minutes across three consecutive trials.”

### 5. Evaluating the Effectiveness of Intervention Goals

ABA practitioners must continually assess progress and adjust goals if needed.

✓ Use the following criteria to evaluate goals:

- Is the goal socially significant? Does it improve the client’s quality of life?
- Is the goal observable and measurable? Can different people agree on whether the behavior occurred?
- Are progress data clear? Can trends be identified from collected data?

- Is the goal attainable? Is it challenging but realistic for the learner?

#### A. Data Collection for Goal Evaluation

ABA teams track progress using:

- Graphing trends to analyze progress over time.
- Probe trials to assess skill maintenance.
- Generalization checks to confirm behavior applies in multiple contexts.

#### B. Adjusting Goals When Needed

If progress stalls, modify:

- The reinforcement schedule (increase motivation).
- The difficulty level (make steps smaller if needed).
- Prompting strategies (adjust support levels).

### 6. Practical Case Study: Developing a Measurable Goal

Scenario:

A 5-year-old with autism struggles with requesting preferred items and tends to cry instead.

Poorly Written Goal:

✘ “The child will improve communication when requesting.”

Revised, Well-Written Goal:

✔ “The child will request preferred items using a one-word verbal response, sign, or PECS in 80% of opportunities across 3 consecutive therapy sessions.”

Data Collection and Evaluation:

- Baseline: The child independently requests items in 10% of opportunities.
- After 4 weeks: Performance increases to 60% of opportunities.
- Final assessment: Achieves 80% mastery, goal is marked achieved.

### 7. Conclusion

Developing observable and measurable intervention goals in ABA ensures that behavior change programs are effective, data-driven, and replicable. By clearly defining behavior, measurement

methods, conditions, and mastery criteria, ABA practitioners set learners up for success and allow for objective progress tracking.

Key Takeaways:

- ✓ Use precise, action-based language when defining goals.
- ✓ Select appropriate measurement methods (frequency, duration, latency, accuracy).
- ✓ Ensure goals have clear mastery criteria (e.g., 80% accuracy across 3 sessions).
- ✓ Regularly evaluate and adjust goals to match the learner's progress.

By following these guidelines, ABA practitioners can create effective, individualized goals that promote meaningful behavior change and skill acquisition.

**H.2. Identify and recommend interventions based on assessment results, scientific evidence, client preferences, and contextual fit (e.g., expertise required for implementation, cultural variables, environmental resources).**

Identifying and Recommending Interventions Based on Assessment Results, Scientific Evidence, Client Preferences, and Contextual Fit in ABA

Introduction

Selecting the appropriate intervention in Applied Behavior Analysis (ABA) requires a comprehensive, individualized approach that integrates multiple factors. A well-designed intervention is based on:

1. Assessment results (functional behavior assessments, skill assessments).
2. Scientific evidence (empirically validated ABA strategies).
3. Client preferences (considering the individual's needs, goals, and values).
4. Contextual fit (environmental factors, cultural variables, and available resources).

This article explores how ABA practitioners identify and recommend interventions that balance effectiveness, ethical considerations, and practicality to promote meaningful behavior change.

1. Identifying Interventions Based on Assessment Results

Effective interventions must be data-driven and individualized. The selection process begins with a thorough behavioral assessment, which may include:

A. Functional Behavior Assessment (FBA)

- Determines the function of problem behavior (escape, attention, access to tangibles, automatic reinforcement).
- Methods include:
  - Indirect assessments (interviews, questionnaires).
  - Descriptive assessments (ABC data collection).
  - Functional analyses (experimental manipulation of antecedents/consequences).
- Example: If an FBA shows that tantrums function as escape behavior, interventions should focus on teaching functional communication instead of escape-maintained behaviors.

B. Skill-Based Assessments

- Identify strengths and deficits in areas like communication, adaptive skills, and academics.
- Examples of assessment tools:
  - Vineland Adaptive Behavior Scales (adaptive skills).
  - VB-MAPP, PEAK, ABLLS-R (language and learning skills).
  - Essential for Living (EFL) (functional communication).

C. Preference Assessments

- Identify highly motivating reinforcers to enhance intervention effectiveness.
- Examples:
  - Paired stimulus preference assessment.
  - Multiple stimulus without replacement (MSWO).

D. Ecological Assessments

- Evaluate environmental factors that influence behavior (e.g., school setting, home dynamics, and peer interactions).

Using Assessment Results to Guide Intervention Selection

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- If assessment results indicate limited verbal communication, interventions like PECS, sign language, or augmentative communication devices may be recommended.
- If data show task avoidance behaviors, interventions may focus on task modification, reinforcement for persistence, and functional communication training (FCT).

### 2. Recommending Evidence-Based Interventions

After gathering assessment data, the next step is selecting scientifically validated interventions. ABA practitioners follow empirical research and professional guidelines (e.g., BACB Task List, National Standards Project).

#### A. Selecting Evidence-Based ABA Interventions

Below are commonly used, research-supported ABA interventions based on function and skill deficits.

Behavior or Skill Deficit	Evidence-Based ABA Intervention
Escape-maintained behavior	Functional Communication Training (FCT), Noncontingent Reinforcement (NCR), Differential Reinforcement (DRA)
Attention-seeking behavior	Differential Reinforcement of Alternative Behavior (DRA), Planned Ignoring, Functional Communication Training
Skill Acquisition (e.g., language delays)	Discrete Trial Training (DTT), Natural Environment Teaching (NET), Video Modeling
Problem behaviors (e.g., aggression, SIB)	Behavior Reduction Plans, Antecedent Interventions, Replacement Behavior Training
Self-management skills	Token Economy, Self-Monitoring, Visual Supports
Generalization & maintenance	Multiple Exemplar Training, Generalization Probes, Naturalistic Teaching Strategies

#### B. Ensuring the Intervention is Empirically Supported

- ABA practitioners should review peer-reviewed research and meta-analyses to ensure intervention effectiveness.
- Practitioners should avoid non-evidence-based practices (e.g., Facilitated Communication, Sensory Integration without empirical support).

#### C. Monitoring and Modifying Interventions

- Even evidence-based strategies require ongoing data collection and modification to meet individual client needs.
- ABA professionals use graphing progress and data analysis to adjust interventions when necessary.

### 3. Considering Client Preferences in Intervention Selection

#### A. The Role of Client and Caregiver Preferences

- Interventions must align with the client's individual goals, values, and preferences.
- Caregivers and clients should be actively involved in decision-making.
- Considerations include:
  - The client's comfort level with the intervention.
  - The family's cultural beliefs about reinforcement and behavior change.
  - The client's own preferences for communication, reinforcement, and learning style.

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### B. Examples of Adjusting Interventions Based on Client Preferences

Client Preference	Adjustment to Intervention
Prefers naturalistic learning	Use Natural Environment Teaching (NET) instead of highly structured Discrete Trial Training (DTT).
Aversion to verbal prompts	Use visual schedules, modeling, or gestural prompts instead.
Cultural beliefs against edible reinforcers	Use social reinforcement, preferred activities, or token economies instead.
Family prioritizes daily living skills over academics	Adjust treatment plan to focus on functional life skills (e.g., dressing, hygiene, cooking).

### C. Social Validity of Interventions

- Social validity ensures that goals, procedures, and outcomes are meaningful to the client and their family.
- Practitioners should regularly seek feedback from caregivers, teachers, and the client to ensure interventions remain appropriate.

#### 4. Evaluating Contextual Fit of Interventions

An intervention must be practical and feasible in the client's environment. Contextual fit refers to how well an intervention aligns with:

1. Expertise Required for Implementation
  - Can parents, teachers, or caregivers effectively implement the plan with training?
  - If an intervention requires complex implementation, are professionals available?
2. Cultural Considerations
  - Does the intervention align with cultural values, beliefs, and family practices?

- Example: Some cultures may prefer group-oriented reinforcement over individual reinforcement.
3. Environmental Resources & Feasibility
- Does the client's home or school environment support the intervention?
  - Example: If reinforcement requires specific materials or settings, consider accessibility.

#### Ensuring a Strong Contextual Fit

- ✓ Train caregivers and staff to implement the intervention effectively.
- ✓ Modify interventions to fit the natural environment (e.g., using NET in place of DTT at home).
- ✓ Ensure interventions respect cultural diversity and are adjusted based on feedback.
- ✓ Choose interventions that are realistic given the available resources.

#### 5. Practical Example: Selecting an Intervention Using a Comprehensive Approach

##### Scenario:

A 6-year-old child diagnosed with autism engages in aggressive behavior when asked to complete non-preferred tasks.

##### Step 1: Conduct a Functional Behavior Assessment (FBA)

- Findings: The function of aggression is escape from difficult tasks.

##### Step 2: Identify an Evidence-Based Intervention

- Scientific Evidence: Functional Communication Training (FCT) and Differential Reinforcement of Alternative Behavior (DRA) are effective for escape-maintained aggression.

##### Step 3: Consider Client Preferences

- The child prefers visual schedules over verbal instructions.
- Caregivers prefer interventions without edible reinforcers.

##### Step 4: Evaluate Contextual Fit

- The intervention must be implemented at home and school.
- Teachers are willing to use token economies but need training on FCT strategies.

Step 5: Implement and Evaluate

- ✓ Teach the child to use a “Break” card instead of aggression.
- ✓ Reinforce completing work with tokens instead of aggression.
- ✓ Adjust the difficulty of tasks gradually (demand fading).
- ✓ Train caregivers and teachers on how to implement the plan.

**H.3. Select socially valid alternative behavior to be established or increased when a target behavior is to be decreased.**

1. Introduction

When reducing problematic behaviors, it is not enough to simply eliminate them. Behavior analysts must also teach functionally equivalent and socially valid alternative behaviors. This ensures that the individual’s needs are still being met in a more appropriate and acceptable way.

2. What is a Socially Valid Alternative Behavior?

A socially valid behavior is one that is:

- Acceptable to the individual and those in their environment (e.g., parents, teachers)
- Age-appropriate and likely to be reinforced naturally
- Functional, meaning it serves the same purpose as the behavior being decreased

□□ Example:

If a child engages in tantrums to escape demands, a socially valid alternative behavior could be learning to request a break using a communication card.

3. The Importance of Teaching Replacement Behaviors

Failing to teach an alternative behavior often leads to:

- Behavioral resurgence (old behavior returns)
- Frustration or aggression

- Ineffective interventions

By establishing a replacement, you create a positive behavior pathway that reduces reliance on problem behavior and increases the individual's quality of life.

#### 4. Functional Equivalence

The alternative behavior should match the function of the target behavior. Common functions include:

- Attention
- Escape/Avoidance
- Access to Tangibles
- Sensory Stimulation

✓ Example of Functional Replacement:

Target behavior: Screaming for attention

Alternative: Raising a hand or using an AAC device to say "Look at me!"

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#### 5. Characteristics of a Good Replacement Behavior

When selecting a replacement behavior, it should be:

- Easier or at least as easy to perform as the problem behavior
- More efficient in achieving the desired outcome
- Consistently reinforced across environments
- Observable and measurable
- Developmentally appropriate

#### 6. Steps to Select a Socially Valid Replacement Behavior

Step 1: Conduct a Functional Behavior Assessment (FBA)

- Identify the maintaining function of the target behavior

Step 2: Define the Target Behavior

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- Ensure it is observable and measurable

### Step 3: Identify Potential Replacement Behaviors

- Brainstorm alternatives that serve the same function

### Step 4: Evaluate Social Validity

- Will the individual use it?
- Is it acceptable to caregivers or teachers?
- Does it fit into the client's daily routine?

### Step 5: Teach and Reinforce the Behavior

- Use prompting, modeling, and reinforcement
- Ensure generalization across settings

## 7. Example

### Target Behavior:

Throwing objects during task demands (Escape function)

### Replacement Behavior:

Using a break card to request time away from the task

### Why it's Socially Valid:

- Functionally equivalent (escape)
- Teachable and easy to use
- More socially acceptable than aggression
- Likely to be supported by teachers or staff

## **H.4 Planning for and Mitigating Unwanted Effects When Using Reinforcement, Extinction, and Punishment Procedures in ABA**

### Introduction

While Applied Behavior Analysis (ABA) interventions are designed to create meaningful behavior change, every behavior change procedure comes with potential unwanted side effects.

To ensure ethical and effective implementation, ABA practitioners must plan for and mitigate these effects when using reinforcement, extinction, and punishment procedures.

This article explores how to anticipate, prevent, and manage potential negative effects to maintain a safe, ethical, and effective treatment approach.

## 1. Potential Unwanted Effects of Reinforcement and Mitigation Strategies

### A. Potential Unwanted Effects of Reinforcement

Reinforcement is the preferred method for increasing desirable behaviors, but improper use can lead to unintended consequences.

Potential Unwanted Effect	Description	Mitigation Strategy
Satiation	The reinforcer loses its effectiveness due to overuse.	Use reinforcer variety, conduct preference assessments, and rotate reinforcers.
Behavioral Contrast	The target behavior decreases in one setting while increasing in another.	Ensure consistent reinforcement across settings and promote generalization.
Dependency on Reinforcement	The behavior only occurs when reinforcement is present.	Gradually fade reinforcement and use natural reinforcers.
Disruptive Behavior to Access Reinforcement	The learner engages in problem behavior to get a reinforcer.	Reinforce only appropriate behaviors and use clear reinforcement contingencies.
Accidental Reinforcement of Unwanted Behavior	Unintended reinforcement strengthens inappropriate behavior.	Ensure reinforcement is delivered contingently on appropriate behavior.

B. Example: Preventing Reinforcement Satiation

Scenario:

A child is given M&Ms as reinforcement for following directions. Over time, the child becomes disinterested.

Mitigation Strategy:

- Conduct a new preference assessment.
- Introduce a token economy with multiple reinforcer options.
- Use social praise and activity-based reinforcement to avoid over-reliance on edibles.

2. Potential Unwanted Effects of Extinction and Mitigation Strategies

A. Potential Unwanted Effects of Extinction

Extinction occurs when reinforcement is no longer provided for a previously reinforced behavior. While effective, it can temporarily lead to negative effects.

Potential Unwanted Effect	Description	Mitigation Strategy
Extinction Burst	A temporary increase in the frequency, intensity, or duration of the behavior before it decreases.	Prepare caregivers for this possibility and reinforce alternative behaviors.
Aggression or Emotional Outbursts	The learner may engage in aggression, crying, or frustration.	Use Differential Reinforcement of Alternative Behavior (DRA) to teach a replacement skill.
Spontaneous Recovery	The behavior reappears after initially being reduced.	Continue consistent extinction procedures and reinforce alternative behaviors.
Escape/Avoidance of Learning	The individual avoids situations where extinction is used.	Use motivating operations, visual schedules, and gradual fading of extinction.
Extinction-Induced Variability	The learner may try other behaviors to gain reinforcement.	Reinforce appropriate alternative responses.

B. Example: Managing an Extinction Burst

Scenario:

A child screams to gain attention from a teacher. The teacher implements extinction by not providing attention when the child screams. Initially, the child screams louder and longer (extinction burst).

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### Mitigation Strategy:

- Prepare caregivers and teachers for the extinction burst.
- Reinforce appropriate replacement behaviors (e.g., saying “excuse me” for attention).
- Ensure all staff remain consistent in ignoring the problem behavior.

### 3. Potential Unwanted Effects of Punishment and Mitigation Strategies

#### A. Potential Unwanted Effects of Punishment

Punishment procedures reduce problem behavior by introducing an aversive consequence (positive punishment) or removing a reinforcer (negative punishment). However, punishment may lead to undesirable side effects.

Potential Unwanted Effect	Description	Mitigation Strategy
Escape and Avoidance	The learner tries to escape or avoid the punishing situation.	Pair punishment with positive reinforcement and use least-restrictive alternatives first.
Emotional or Aggressive Responses	The learner may react with anger, crying, or aggression.	Implement Differential Reinforcement (DRA or DRO) for positive behaviors.
Behavioral Suppression	Punishment may stop all behaviors, including appropriate ones.	Reinforce desired behaviors frequently to maintain engagement.
Modeling of Punishment	The learner may imitate punitive behaviors with others.	Use positive reinforcement-based strategies whenever possible.
Unintended Reinforcement of Punishment	Punishment may inadvertently reinforce problem behavior (e.g., attention from scolding).	Ensure punishment is implemented correctly, without unintentionally reinforcing behavior.

#### B. Example: Avoiding Escape Behavior After Time-Out

Scenario:

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A child engages in aggression and is placed in a time-out. However, the child begins engaging in mild disruptive behaviors to get sent to time-out, avoiding classroom work.

Mitigation Strategy:

- Modify time-out so it does not allow for escape from demands.
- Use Differential Reinforcement of Alternative Behavior (DRA) to reinforce on-task behavior.
- Implement Noncontingent Reinforcement (NCR) by providing scheduled attention to reduce attention-seeking aggression.

### 4. General Strategies to Mitigate Unwanted Effects Across All Procedures

#### A. Use Differential Reinforcement

✓ Differential Reinforcement of Alternative Behavior (DRA): Reinforce a more appropriate behavior that serves the same function as the problem behavior.

✓ Differential Reinforcement of Other Behavior (DRO): Reinforce the absence of the problem behavior within a time interval.

#### B. Use Functional Communication Training (FCT)

✓ Teach replacement communication strategies (e.g., using a communication device instead of engaging in problem behavior).

#### C. Implement Gradual Fading and Blending of Strategies

✓ Avoid abrupt removal of reinforcement by using fading procedures (e.g., thinning schedules of reinforcement).

#### D. Use Least-Intrusive, Ethical Interventions First

✓ Prioritize reinforcement-based strategies over extinction or punishment whenever possible.

✓ Consider cultural, ethical, and contextual factors before implementing punishment procedures.

#### E. Train Caregivers and Staff for Consistency

✓ Ensure consistent application of behavior change procedures across settings.

✓ Use parent and teacher training to align intervention across home, school, and therapy.

## 5. Ethical Considerations in Using Reinforcement, Extinction, and Punishment

ABA practitioners must follow ethical guidelines from the BACB Ethics Code to ensure interventions are:

- ✓ Least Restrictive – Use reinforcement before considering extinction or punishment.
- ✓ Data-Driven – Collect and analyze data to monitor intervention effectiveness.
- ✓ Client-Centered – Consider social validity (e.g., caregiver and client perspectives).
- ✓ Culturally Responsive – Ensure strategies align with family values and beliefs.

### Avoiding Ethical Violations

- ✗ Overusing punishment without reinforcement (can cause emotional harm).
- ✗ Failing to prepare for extinction bursts (can lead to crisis behavior).
- ✗ Implementing interventions inconsistently (reduces effectiveness).

## 6. Conclusion

ABA practitioners must anticipate, prevent, and mitigate unwanted effects when implementing reinforcement, extinction, and punishment procedures. By using differential reinforcement, functional communication training, and gradual fading, behavior analysts can promote long-term behavior change while maintaining client dignity and well-being.

### Key Takeaways:

- ✓ Reinforcement should be varied and strategically faded to prevent dependency and satiation.
- ✓ Extinction bursts and emotional reactions should be planned for and managed through differential reinforcement.
- ✓ Punishment procedures should be used cautiously, with reinforcement for alternative behaviors to avoid negative side effects.
- ✓ Ethical guidelines and client preferences must always be considered when designing interventions.

## H.5. Plan for and attempt to mitigate possible relapse of the target behavior.

### Planning for and Mitigating Relapse of Target Behavior in ABA

#### Introduction

Relapse of target behavior, also known as response reemergence, occurs when a previously reduced or eliminated behavior returns after intervention is faded. In Applied Behavior Analysis (ABA), relapse can happen for various reasons, including weak generalization, changes in reinforcement, or failure to maintain treatment fidelity.

**TARGET BEHAVIORS (PSYCHOLOGY)**  
A target behavior is the specific actions of an individual that are selected for modification in behavioral psychology.

DEFINITION	EXAMPLE
<p>The term target behavior in Applied Behavior Analysis (ABA) is the behavior that you want to modify, remove, replace, or change.</p> <p>Before implementing an ABA behavior modification intervention, the clinician aims to clearly name the target behavior in what we call an operational definition.</p>	<ul style="list-style-type: none"><li>• <b>Urge to reach for a device:</b> Many adults suffer from electronic device addiction. They may need to target this impulse and try to modify it through ABA.</li><li>• <b>Making disruptive noises:</b> A student talking or making noises excessively in class may require ABA targeting these behaviors to help them blend into class well.</li></ul>

This article explores why relapse occurs, how to plan for it proactively, and strategies to mitigate its impact, ensuring long-term behavior change and generalization.

#### 1. Understanding Why Relapse Occurs

##### A. Common Forms of Relapse

1. Spontaneous Recovery – The sudden return of a behavior after extinction.
  - Example: A child who no longer engages in tantrums suddenly begins tantruming again weeks after extinction was implemented.
2. Renewal Effect – Behavior reappears when the setting changes.
  - Example: A student who has learned to use a quiet voice at school begins shouting at home.
3. Resurgence – A previously reinforced behavior reappears when reinforcement for a new behavior is removed.

- Example: A child taught to ask for a break instead of hitting may start hitting again if requesting a break is no longer reinforced.

4. Reinstatement – A behavior returns when the reinforcer is unexpectedly delivered after extinction.

- Example: A child whose problem behavior was extinguished suddenly resumes it after accidentally receiving reinforcement.

Understanding these types of relapse allows ABA practitioners to anticipate and prevent them proactively.

## 2. Strategies to Plan for and Prevent Relapse

ABA practitioners must design interventions that promote maintenance and generalization of behavior across settings, people, and time.

### A. Reinforcement-Based Strategies

1. Use Intermittent Reinforcement for Maintenance

- Instead of stopping reinforcement abruptly, gradually thin reinforcement schedules (e.g., moving from continuous reinforcement to variable reinforcement).

- Example: Instead of reinforcing every correct response, provide reinforcement randomly after 3-5 responses to build persistence.

2. Teach Natural Reinforcement Strategies

- Shift reinforcement from external (e.g., tokens, edibles) to natural reinforcers (e.g., praise, social approval, self-satisfaction).

- Example: A child learning social skills should experience natural peer interactions as reinforcement instead of therapist-given rewards.

3. Reinforce Response Variability

- Encourage the learner to use multiple forms of a target skill (e.g., requesting help using words, gestures, or AAC devices).

- Example: If a child is taught to request attention by saying “Look at me”, reinforce variations like “Hey,” “Can I show you something?”

### B. Generalization Strategies

1. Train Across Multiple Settings and People

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- Teach the behavior in different environments and with various instructors to prevent renewal effects.
- Example: A child learning to follow directions should practice at home, school, and the playground with different caregivers.
- 2. Vary Instructional Cues and Materials
  - Prevent dependence on specific stimuli by varying prompts and instructions.
  - Example: Instead of always saying, “Time to clean up,” use “Put your toys away,” “Let’s get ready,” etc.
- 3. Use Generalization Probes
  - Assess whether the behavior persists across new settings and conditions without direct intervention.
  - Example: If a student learns to stay seated in class, check if they generalize it to the cafeteria or library.

### C. Preventing Extinction-Induced Relapse

1. Use Differential Reinforcement Continuously
  - Even after behavior reduction, reinforce appropriate replacement behaviors to prevent resurgence.
  - Example: If a child learns to ask for a break instead of screaming, continue reinforcing break requests even after screaming decreases.
2. Implement a Gradual Extinction Plan
  - Avoid sudden removal of reinforcement to prevent frustration.
  - Example: If a child previously received attention for crying, gradually decrease attention over time while reinforcing other behaviors.
3. Monitor for Spontaneous Recovery
  - Expect that behaviors may temporarily resurface and prepare caregivers to stay consistent in response.
  - Example: If tantrums reappear after extinction, caregivers should not reinforce the behavior but continue using the replacement strategy.

### D. Long-Term Monitoring and Follow-Up

1. Implement Booster Sessions
  - Periodically reassess and reinforce skills to ensure maintenance.
  - Example: After a child successfully reduces aggression, conduct a monthly check-in to reinforce appropriate behaviors.
2. Train Caregivers and Support Staff
  - Ensure teachers, parents, and therapists use the same strategies consistently.
  - Example: If extinction is used for attention-seeking behavior, ensure all caregivers ignore tantrums consistently.
3. Establish Self-Management Techniques
  - Teach individuals to monitor and regulate their own behaviors.
  - Example: A child learning impulse control can use self-monitoring checklists to track their own behavior.

### 3. What to Do If Relapse Occurs

If the target behavior resurfaces, ABA practitioners should:

1. Conduct a Quick Functional Assessment
  - Determine why the behavior returned (e.g., change in reinforcement, environmental triggers).
2. Reinstate the Intervention Temporarily
  - Reinforce replacement behaviors more frequently for a short period.
3. Modify the Environment
  - Ensure reinforcers are still available for the appropriate behavior.
4. Retrain and Provide Additional Support
  - If needed, re-teach the skill in the natural environment.

### 4. Practical Case Study: Preventing Relapse in a Child with Escape-Maintained Behavior

Scenario:

A child with autism engages in tantrums to escape non-preferred tasks. The ABA team implements Functional Communication Training (FCT), teaching the child to request a break instead of tantruming.

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### Risk of Relapse:

- The child may stop using the break request when reinforcement fades.
- If teachers do not reinforce the new behavior, the child may return to tantrums.

### Plan to Prevent Relapse:

- ✓ Gradually fade reinforcement (move from continuous reinforcement to intermittent schedules).
- ✓ Teach multiple ways to request a break (e.g., words, gestures, break card).
- ✓ Train teachers to reinforce break requests consistently.
- ✓ Periodically probe for generalization in different settings.
- ✓ Implement a follow-up plan (check behavior every 4 weeks).

### Key Takeaways:

- ✓ Expect some relapse and prepare accordingly.
- ✓ Use generalization strategies to promote behavior persistence.
- ✓ Maintain reinforcement for replacement behaviors even after initial success.
- ✓ Train caregivers and staff for consistent intervention across settings.
- ✓ Implement booster sessions and long-term monitoring to maintain progress.

H.6. Make data-based decisions about procedural integrity.

## Probability of Benefit Empirically Supported?

		<b>Yes</b>	<b>No</b>
		<b>Benefit likely</b>	<b>Benefit unlikely</b>
<b>Treatment Integrity</b>	<b>High</b>	<b>Benefit likely</b>	<b>Benefit unlikely</b>
	<b>Low</b>	<b>Benefit unlikely</b>	<b>Benefit unlikely</b>

Making Data-Based Decisions About Procedural Integrity in ABA

Introduction

Procedural integrity (also known as treatment fidelity) refers to how accurately a behavior change intervention is implemented as it was designed. In Applied Behavior Analysis (ABA), ensuring procedural integrity is essential for validating intervention effectiveness, maintaining ethical standards, and making data-based treatment modifications.

Data collection: Mark + if component was implemented correctly, mark O if component was not implemented, mark C if component was implemented incorrectly, mark N/A if component was not applicable.  
 Date: 7/29/22 Behavior-change agent: GS Supervisor: XD Client: YM  
 Program: Matching by Category Error Correction

Components	Trials						Individual-component integrity
	1	2	3	4	5	6	
1 Secures attention	+	+	+	+	+	+	6/6 = 100%
2 Presents session materials	+	+	+	+	+	+	6/6 = 100%
3 Presents instruction	+	C	C	+	C	+	3/6 = 50%
4 Delivers prompt	+	+	C	N/A	N/A	O	2/4 = 50%
5 Delivers praise/reinforcer	+	+	O	+	+	+	5/6 = 83.3%
6 Additional components (e.g., error correction)	+	N/A	+	N/A	N/A	N/A	2/2 = 100%
7 Records data	+	+	+	+	+	+	6/6 = 100%
8 Presents next trial within 5 s of removing S+	+	+	+	+	+	+	6/6 = 100%
<b>3 Individual-trial integrity</b>	8/8 = 100%	6/7 = 85.7%	5/8 = 62.5%	6/6 = 100%	5/6 = 83.3%	6/7 = 85.7%	<b>2 All-or-nothing by component</b> 5/8 = 62.5%
<b>4 All-or-nothing by trial</b>	2/6 = 33.3%						
<b>5 Global Integrity</b>	36/42 = 85.7%						
If C was scored, what were the extra components (e.g., starting at S+, touching S+ last, positioning the S+ closer to learner, adding extra words to the S <sup>D</sup> , repeating prompts, etc.)? Added extra words to the instruction (e.g., "You got this one last time."), provided physical guidance when should have provided a gestural prompt							

This article explores how ABA practitioners measure procedural integrity, identify issues, and use data to improve intervention fidelity to maximize treatment success.

## 1. Understanding Procedural Integrity

### A. What is Procedural Integrity?

Procedural integrity is the degree to which an intervention is implemented as planned. High integrity ensures:

- ✓ Valid data collection (ensuring that results reflect the intervention's true effectiveness).
- ✓ Consistency across therapists and settings.
- ✓ Reliable behavior change outcomes.

Example:

- High Integrity – If a behavior plan requires a 5-second response delay before prompting, and staff consistently apply it within 5 seconds, the plan is implemented with high fidelity.
- Low Integrity – If some staff wait 10+ seconds or prompt immediately, procedural integrity is compromised, and treatment effectiveness may suffer.

### B. Why is Procedural Integrity Important?

- Ensures intervention effectiveness – Poor implementation may cause inaccurate conclusions about a treatment's success.
- Prevents reinforcement of problem behaviors – If staff inconsistently reinforce replacement behaviors, the learner may revert to problem behaviors.
- Reduces variability in data – If different therapists implement the intervention inconsistently, data may appear unstable or misleading.
- Promotes ethical and professional responsibility – Following BACB ethical standards ensures client progress is based on scientifically valid interventions.

## 2. Measuring Procedural Integrity in ABA

To make data-based decisions, ABA practitioners must systematically measure procedural integrity using structured observation and fidelity tracking.

### A. Direct Measurement of Procedural Integrity

1. Task Analysis Checklists – Breaking down interventions into step-by-step components to measure accuracy.

- ✓ Example: For a Discrete Trial Training (DTT) program, data collectors track:
- ✓ Did the therapist give a clear SD (discriminative stimulus)?
- ✓ Did the therapist prompt within 3 seconds if needed?
- ✓ Did the therapist deliver reinforcement immediately after correct responses?

2. Treatment Integrity Data Sheets – A checklist where observers rate the percentage of correct implementation.

- ✓ Example: If a therapist correctly implements 8 out of 10 steps, integrity is 80%.

3. Video Recording for Review – Supervisors or BCBAs record sessions to assess fidelity and provide feedback.

4. Inter-observer Agreement (IOA) Checks – Two or more observers collect integrity data independently and compare results to ensure accuracy.

#### B. Indirect Measurement of Procedural Integrity

1. Self-Report Questionnaires – Practitioners complete self-evaluations on intervention adherence.

- △ Limitation – May be biased or inaccurate.

2. Staff and Parent Interviews – Conducting verbal check-ins on adherence to protocols.

3. Permanent Product Review – Examining data sheets, reinforcement logs, and behavior tracking records to confirm procedures were followed.

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### C. Establishing Integrity Criteria

Procedural integrity should be quantified and monitored regularly.

Integrity Level	Interpretation	Recommended Action
90-100% Integrity	High Fidelity	Continue with intervention as planned.
80-89% Integrity	Moderate Fidelity	Provide booster training to staff or adjust procedures.
Below 80% Integrity	Low Fidelity	Immediate retraining, increased supervision, and protocol adjustments needed.

### 3. Identifying Procedural Integrity Issues

If treatment is not producing expected results, ABA professionals should investigate integrity data before making changes to the behavior plan.

✓ Example: A behavior reduction plan is not working. What should be checked?

- Are staff following extinction procedures correctly?
- Is reinforcement being delivered as specified?
- Are response prompts occurring at the correct interval?

### Common Causes of Low Procedural Integrity

1. Inconsistent Implementation – Staff apply interventions differently across settings.
2. Failure to Follow Prompting Hierarchy – Therapists overuse or underuse prompts.
3. Delayed Reinforcement Delivery – Reinforcement is given too late or inconsistently.
4. Lack of Training or Supervision – Therapists are not adequately trained in the intervention.

#### 4. Making Data-Based Decisions to Improve Procedural Integrity

When procedural integrity data reveals inconsistencies, BCBAs must use a data-driven approach to improve implementation.

##### A. Strategies to Improve Integrity

1. Provide Staff Training & Competency Checks

- Conduct initial and ongoing training.
- Use Behavioral Skills Training (BST):

✓ Instruction – Explain the procedure clearly.

✓ Modeling – Demonstrate correct implementation.

✓ Rehearsal – Staff practice implementation.

✓ Feedback – Provide corrective guidance.

2. Increase Supervision & Performance Feedback

- Use direct observation and coaching sessions to reinforce correct implementation.
- Provide immediate performance feedback (e.g., “You provided reinforcement too late; next time, deliver it within 2 seconds”).

3. Use Visual Supports and Checklists

- Implement step-by-step fidelity checklists to remind staff of correct procedures.

4. Modify Interventions for Feasibility

- If procedural integrity remains low, simplify protocols to make them easier to follow.
- Example: Instead of a complicated reinforcement schedule, use a token economy system that is easier to track.

5. Reinforce Treatment Adherence

- Just as we reinforce behavior in clients, reinforce staff for procedural integrity (e.g., verbal praise, small incentives).

#### 5. Case Study: Data-Based Integrity Monitoring

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Scenario:

A BCBA is supervising a mand training program where children are taught to request items. However, data show limited progress in requesting behavior.

Step 1: Measure Procedural Integrity

The BCBA collects integrity data on therapists' implementation of mand training and finds:

- ✓ Correct SD delivery = 100%
- ✗ Prompting within 3 seconds = 60% (Therapists delay prompting)
- ✗ Reinforcement within 2 seconds = 70% (Delayed reinforcement delivery)

Step 2: Address Integrity Issues

- ✓ Provide training on reinforcement timing.
- ✓ Implement a checklist for therapists to track correct prompting speed.
- ✓ Conduct weekly integrity checks to reinforce proper implementation.

Outcome:

After two weeks, procedural integrity improves to 90%, and manding behaviors increase in learners.

6. Ethical Considerations in Procedural Integrity

ABA practitioners are ethically responsible for:

- ✓ Ensuring interventions are implemented as designed.
- ✓ Using data-based decision-making before modifying a treatment.
- ✓ Providing adequate training and supervision to interventionists.
- ✓ Reporting procedural integrity accurately and transparently to stakeholders.

Following BACB ethical guidelines, behavior analysts must monitor treatment fidelity before concluding that a behavior plan is ineffective.

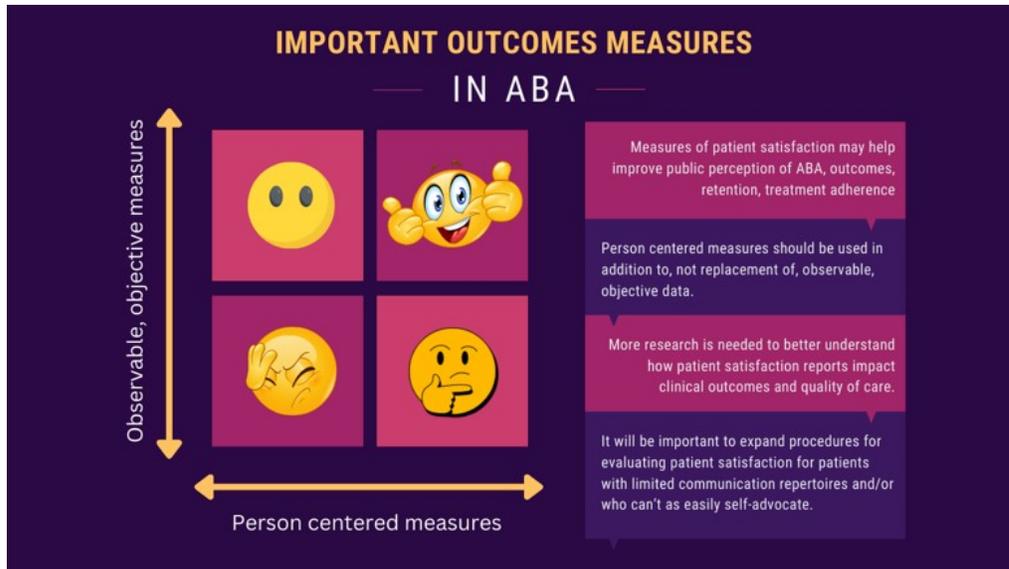


Key Takeaways:

- ✓ Procedural integrity ensures interventions are applied as designed.
- ✓ Integrity data should be collected using checklists, IOA, and direct observation.
- ✓ Low integrity can distort treatment effectiveness and lead to unreliable data.
- ✓ Ongoing training, supervision, and feedback improve procedural integrity.
- ✓ ABA professionals must prioritize data-driven modifications before changing an intervention.

By maintaining high procedural integrity, ABA practitioners ensure client success, ethical intervention delivery, and long-term behavior change.

**H.7. Make data-based decisions about the effectiveness of the intervention and the need for modification.**



## Making Data-Based Decisions About the Effectiveness of an Intervention and the Need for Modification in ABA

### Introduction

In Applied Behavior Analysis (ABA), making data-based decisions ensures that interventions are effective in reducing problem behaviors, teaching new skills, and promoting meaningful behavior change. ABA professionals must continuously analyze data, assess progress, and modify interventions as needed to maximize treatment outcomes.

This article explores how to evaluate intervention effectiveness, recognize when modifications are necessary, and use data to guide decision-making in a systematic and ethical manner.

#### 1. Why Data-Based Decision Making is Critical

- ✓ Ensures objective assessment of progress.
- ✓ Prevents unnecessary delays in modifying ineffective interventions.
- ✓ Maintains treatment fidelity and accountability.
- ✓ Aligns with ethical best practices to maximize client progress.

Without ongoing data collection and analysis, ABA professionals risk using ineffective strategies that may lead to delayed skill acquisition, frustration, or regression.

#### 2. Evaluating the Effectiveness of an Intervention

To determine if an intervention is working, behavior analysts collect and analyze objective data over time.

A. Common Data Collection Methods

Data Collection Method	What It Measures	Example
Frequency	How often a behavior occurs.	The child engages in tantrums 5 times per session.
Duration	How long a behavior lasts.	A tantrum lasts 8 minutes per occurrence.
Latency	Time between an SD and a response.	It takes 10 seconds for the child to follow an instruction.
Rate	Frequency over time.	The child engages in 3 aggressive behaviors per hour.
Percentage of Correct Responses	Accuracy of skill acquisition.	The child correctly identifies letters in 80% of trials.

These data are graphed and analyzed to determine whether behavior is increasing, decreasing, or remaining unchanged.

B. Criteria for Assessing Effectiveness

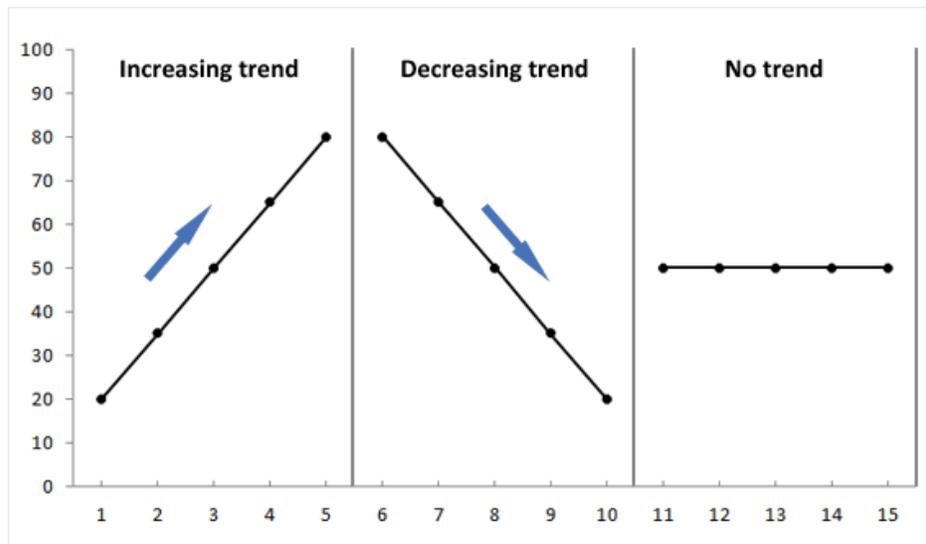
A behavior change program is considered effective if:

- ✓ The target behavior is improving (e.g., skill acquisition increases or problem behavior decreases).
- ✓ Data show a consistent trend in the desired direction.
- ✓ Generalization and maintenance are occurring.

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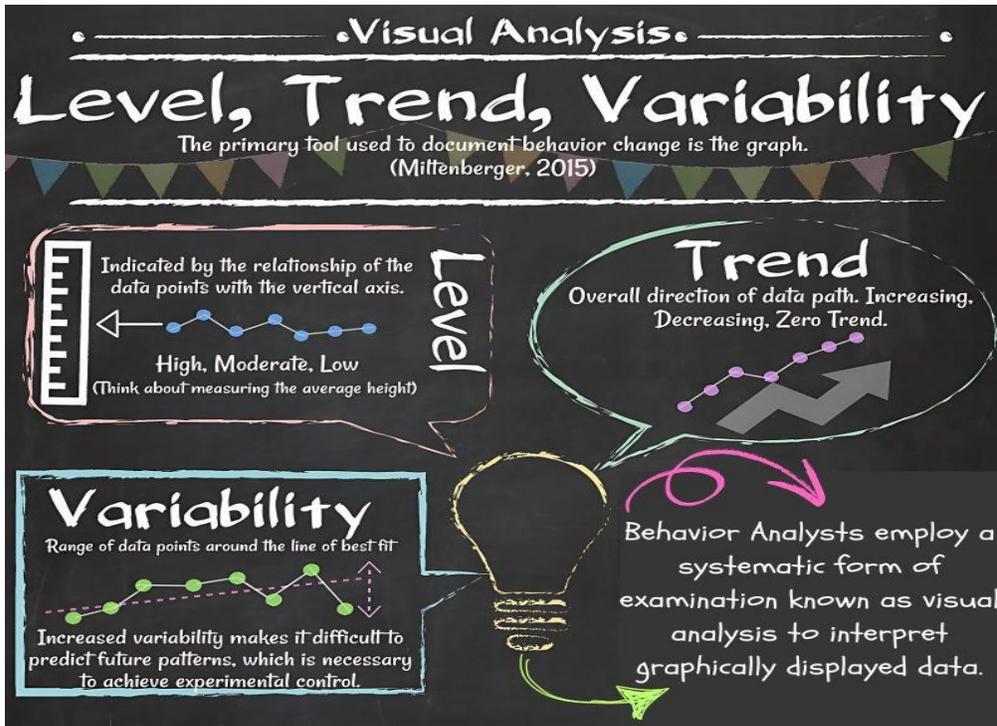
A program may be ineffective if:

- ✗ The behavior remains unchanged over multiple sessions.
- ✗ The intervention is producing negative side effects (e.g., increased aggression, avoidance behaviors).
- ✗ No generalization is observed outside of training conditions.



### C. Visual Analysis of Data

ABA practitioners use graphs to evaluate trends in behavior.



- Increasing trend – If the goal is skill acquisition, this is a positive sign.
- Decreasing trend – If the goal is reducing problem behavior, this indicates progress.
- Flat trend (No Progress) – The intervention may need modification.
- Inconsistent data – If progress is unstable, external factors may be affecting intervention success.

### 3. When and How to Modify an Intervention

If data suggest an intervention is ineffective or progress is too slow, modifications should be data-driven, systematic, and ethical.

#### A. Factors to Consider Before Modifying an Intervention

Before making changes, ABA professionals should identify the root cause of the issue by asking:

- ✓ Is the intervention being implemented with integrity? – Check procedural fidelity.

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- ✓ Is reinforcement strong enough? – Conduct a reinforcer assessment.
- ✓ Are setting events impacting behavior? – Consider medical issues, home environment, or sleep.
- ✓ Is the behavior naturally fluctuating? – Look for seasonal or situational factors.

### B. Data-Based Modification Strategies

Reason for Modification	Modification Strategy
Behavior is not improving	Adjust reinforcement frequency or intensity.
Behavior is getting worse	Check for inadvertent reinforcement and revise the plan.
Skill acquisition is too slow	Increase prompting strategies or reduce task difficulty.
Lack of generalization	Introduce multiple exemplars, settings, and instructors.
Intervention is too difficult for the learner	Simplify the skill or introduce task analysis.

### C. Case Study: Modifying an Ineffective Intervention

Scenario:

A BCBA is teaching a child with autism to request help instead of engaging in tantrums. However, after 3 weeks, tantrums remain at the same frequency.

Step 1: Analyze Data

- Data show no reduction in tantrums.
- Reinforcement was only delivered 50% of the time due to inconsistent therapist implementation.

Step 2: Identify Issues

- ✓ Procedural integrity issue – Some staff reinforced tantrums inadvertently.
- ✓ Reinforcement was not strong enough compared to problem behavior.

### Step 3: Modify the Intervention

- ✓ Provide additional staff training on reinforcement schedules.
- ✓ Increase the strength of reinforcers for appropriate requests.
- ✓ Introduce prompting to ensure requests occur before tantrums.

#### Outcome:

After modifications, tantrums decrease by 60%, and requests for help increase.

### 4. Ethical Considerations in Data-Based Decision Making

ABA professionals must follow BACB ethical guidelines when making modifications:

- ✓ Use reinforcement-based interventions first.
- ✓ Ensure modifications are based on data, not assumptions.
- ✓ Consider client preferences and social validity.
- ✓ Maintain transparency with caregivers, teachers, and stakeholders.
- ✓ Ensure modifications align with the least restrictive intervention.

### 5. Conclusion

Making data-based decisions about intervention effectiveness is critical in ABA treatment planning. By collecting objective data, analyzing trends, and modifying interventions systematically, behavior analysts ensure optimal progress and ethical treatment.

#### Key Takeaways:

- ✓ Graph and analyze data to determine effectiveness.
- ✓ If progress is slow or inconsistent, investigate possible barriers.
- ✓ Modifications should be based on data, not trial and error.
- ✓ Ensure procedural integrity and treatment fidelity before modifying an intervention.

✓ Ethical and client-centered decision-making is essential.

By applying these best practices, ABA professionals can ensure meaningful and lasting behavior change for their clients.

## **H.8. Collaborate with others to support and enhance client services**

### Collaborating with Others to Support and Enhance Client Services in ABA

#### Introduction

Collaboration is a fundamental component of Applied Behavior Analysis (ABA) services, ensuring that clients receive comprehensive, coordinated, and effective treatment. ABA professionals must work closely with caregivers, educators, speech and occupational therapists, medical professionals, and other stakeholders to align intervention goals, share progress, and enhance the client's overall well-being.

This article explores best practices for interdisciplinary collaboration, its benefits, and strategies to ensure effective communication and teamwork in ABA services.

#### 1. Why Collaboration is Essential in ABA Services

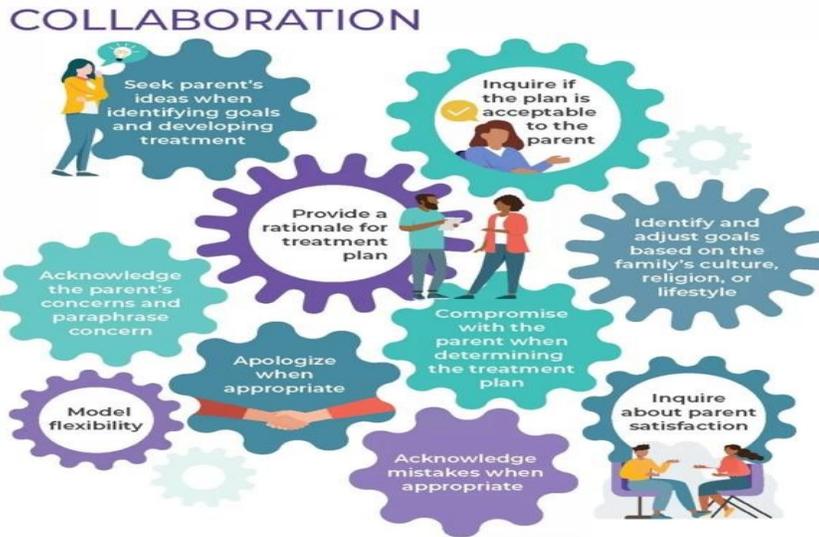
✓ Ensures Consistency Across Environments – Clients receive the same behavioral expectations and reinforcement strategies at home, school, and therapy settings.

✓ Enhances Generalization – When multiple professionals reinforce the same skills, clients learn to apply behaviors across different contexts.

✓ Addresses Multiple Needs – Many clients require multidisciplinary support (e.g., ABA for behavior, speech therapy for communication, OT for motor skills).

✓ Improves Client Outcomes – Combining expertise from various professionals enhances intervention effectiveness.

✓ Encourages Family and Caregiver Involvement – Empowering caregivers ensures skills are practiced beyond



Quiz Section H: Selecting and Implementing Intervention:

BACB 6th Edition Task List - Section H: Selecting and Implementing Interventions

20-Question Multiple Choice Quiz

**1. What is the first step when selecting an intervention for a client?**

- A) Implementing an intervention immediately
- B) Conducting a functional behavior assessment (FBA)
- C) Choosing an intervention based on the practitioner's preference
- D) Asking caregivers which intervention they prefer

**2. Which of the following is an example of an evidence-based ABA intervention?**

- A) Sensory Integration Therapy
- B) Facilitated Communication
- C) Functional Communication Training (FCT)
- D) Rapid Prompting Method

**3. When implementing reinforcement procedures, it is essential to:**

- A) Provide reinforcement intermittently from the start
- B) Ensure reinforcement is contingent on the target behavior

- C) Only reinforce behaviors that occur naturally
- D) Use reinforcement only after extinction is attempted

**4. Which of the following is a critical consideration when selecting an intervention?**

- A) The intervention's popularity among practitioners
- B) The client's individual needs, preferences, and skill level
- C) The ease of implementation for the therapist
- D) The cost of the intervention materials

**5. What is the primary purpose of a behavior intervention plan (BIP)?**

- A) To ensure punishment procedures are used appropriately
- B) To provide a detailed plan to reduce problem behavior and teach replacement skills
- C) To document every occurrence of problem behavior
- D) To increase the use of restrictive procedures

**6. When using a punishment procedure, which of the following is an essential ethical consideration?**

- A) Ensuring reinforcement-based alternatives have been attempted first
- B) Implementing punishment as the primary intervention
- C) Keeping punishment procedures secret from caregivers
- D) Using punishment frequently to ensure behavior reduction

**7. Which reinforcement schedule is typically used when first teaching a new behavior?**

- A) Fixed Ratio (FR)
- B) Variable Ratio (VR)
- C) Continuous Reinforcement (CRF)
- D) Variable Interval (VI)

**8. What is an example of stimulus generalization in an ABA intervention?**

- A) A child who learns to say "hello" to their teacher also says "hello" to a store clerk
- B) A child who requests juice at home but not at school
- C) A learner requiring a prompt every time they perform a skill

D) A behavior that only occurs in one setting and not another

**9. If an intervention is not producing expected results, the first step should be:**

A) Abandon the intervention and select a new one

B) Collect and review procedural integrity data

C) Increase the reinforcement schedule

D) Apply a punishment procedure

**10. When implementing extinction, what is a common challenge that may occur?**

A) Immediate and permanent reduction in behavior

B) An increase in the behavior before it decreases (extinction burst)

C) The behavior never occurring again

D) The need to use punishment to support extinction

**11. What is a major risk when reinforcement is removed too quickly?**

A) The client will learn to be independent

B) The target behavior may become more resistant to change

C) Generalization will improve

D) The behavior will maintain automatically

**12. When selecting an intervention, which of the following is NOT a key factor?**

A) Social validity

B) Cultural considerations

C) Practitioner's personal opinion

D) Scientific evidence supporting the intervention

**13. What is the purpose of task analysis in skill acquisition?**

A) To break down complex behaviors into smaller teachable steps

B) To identify all problem behaviors

C) To replace direct instruction

D) To increase the difficulty of learning a new skill

**14. A token economy is an example of:**

- A) An antecedent intervention
- B) Negative reinforcement
- C) A conditioned reinforcement system
- D) A punishment procedure

**15. What is an essential component when designing an intervention for behavior reduction?**

- A) Teaching an appropriate replacement behavior
- B) Using only punishment procedures
- C) Ignoring all behaviors until they disappear
- D) Relying solely on natural consequences

**16. Why is it important to evaluate the effectiveness of an intervention continuously?**

- A) To ensure procedural integrity and modify if necessary
- B) To justify continued funding for services
- C) To avoid having to create new interventions
- D) To reinforce the use of punishment procedures

**17. What is the most ethical way to modify an intervention when it is ineffective?**

- A) Make abrupt changes without informing caregivers
- B) Collect data to identify specific barriers to success before modifying
- C) Assume the intervention will work eventually and continue without changes
- D) Use a punishment procedure to increase effectiveness

**18. When teaching a child to request preferred items, what is the best way to reinforce the behavior?**

- A) Provide social praise only
- B) Give the child access to the item they requested
- C) Wait 5 minutes before reinforcing to avoid dependency
- D) Provide reinforcement randomly

**19. When implementing an intervention across multiple settings, what strategy should be used to increase generalization?**

- A) Train the skill in only one setting first
- B) Ensure the skill is reinforced only in a clinical setting
- C) Use multiple exemplars, settings, and people
- D) Implement punishment when behavior occurs outside of training

**20. When implementing a reinforcement-based intervention, what should practitioners avoid?**

- A) Reinforcing too frequently
- B) Reinforcing problem behavior accidentally
- C) Using differential reinforcement
- D) Using a variety of reinforcement types

**ASSIGNMENT**

Applied Supervision Assignment Plan, revised to include one required video assignment per section of the BACB 6th Edition Task List. These video tasks are designed to demonstrate applied competence and support mastery through direct modeling or verbal explanation.

**Section H: Selecting and Implementing Interventions**

1. Goal Writing Practice

Write treatment goals that are objective, observable, measurable, and culturally aligned.

2. Intervention Revision

Review a current plan and propose evidence-based modifications.

3. Literature Review

Summarize 2–3 peer-reviewed articles related to a selected intervention.

4. Mitigating Unwanted Effects

Write a plan to minimize unwanted side effects of reinforcement, extinction, or punishment.

Video Assignment:

“Justifying an Intervention Choice” – Record yourself explaining to a parent or team why you selected a specific intervention and how you ensured cultural/contextual fit and minimized side effects.

## **Section H**

### **Primary Books**

#### **(Foundational Sources)**

1. Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). *Applied behavior analysis* (3rd ed.). Pearson.

(Covers intervention selection, social validity, contextual fit, least intrusive methods, and data-based decision-making.)

2. Bailey, J. S., & Burch, M. R. (2016). *Ethics for behavior analysts* (3rd ed.). Routledge.

(Covers ethical selection of interventions, client assent, least restrictive alternatives.)

3. Bailey, J. S., & Burch, M. R. (2022). *Ethics for behavior analysts* (4th ed.). Routledge.

(Newer edition with expanded examples on social validity, risk-benefit analysis, client-centered planning.)

4. Miltenberger, R. G. (2016). *Behavior modification: Principles and procedures* (6th ed.). Cengage Learning.

\*(Good applied examples of intervention planning, reinforcement-based procedures, extinction, and punishment.)

### **Journal Articles**

#### **(Key Research and Conceptual Foundations)**

1. Wolf, M. M. (1978). Social validity: The case for subjective measurement or how applied behavior analysis is finding its heart. *Journal of Applied Behavior Analysis*, 11(2), 203–214. <https://doi.org/10.1901/jaba.1978.11-203>

(Foundational paper on the concept of social validity.)

2. Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis*, 1(1), 91–97. <https://doi.org/10.1901/jaba.1968.1-91>

(Highlights social significance, effectiveness, and technological clarity — key for selecting interventions.)

3. Horner, R. H., Carr, E. G., Strain, P. S., Todd, A. W., & Reed, H. K. (2002). Problem behavior interventions for young children with autism: A research synthesis. *Journal of Autism and Developmental Disorders*, 32(5), 423–446. <https://doi.org/10.1023/A:1020593922901>

(Supports evidence-based intervention selection.)

4. Slocum, T. A., Detrich, R., Wilczynski, S. M., Spencer, T. D., & Lewis, T. (2014). The evidence-based practice of applied behavior analysis. *The Behavior Analyst*, 37(1), 41–56. <https://doi.org/10.1007/s40614-014-0005-x>

(Directly discusses evidence-based decision making in ABA.)

## **Webpages**

### **(Official and Supplemental)**

1. Behavior Analyst Certification Board (BACB). (2022). BCBA 6th Edition Task List and Content Outline.

<https://www.bacb.com/bcba-6th-edition-task-list/>

## THE BCBA EXAM STUDY GUIDE

(Specifies how BCBAAs must select, design, and evaluate interventions.)

2. BACB Ethics Code for Behavior Analysts (2022).

<https://www.bacb.com/ethics-information/>

(Governs intervention selection, assent, cultural responsiveness, risk/benefit analysis.)

3. Association for Behavior Analysis International (ABAI). (n.d.). What is Behavior Analysis?

<https://www.abainternational.org/about-us/about-behavior-analysis.aspx>

(Briefly touches on using evidence-based interventions and social validity.)

4. Cambridge Center for Behavioral Studies. (n.d.). Behavior Analysis: A Brief Overview.

<https://behavior.org/behavior-analysis/>

(Covers evidence-based decision making in applied behavior analysis.)

### KEY DEFINITIONS SECTION H

#### Direct replication

An experiment in which the researcher attempts to duplicate exactly the conditions of an earlier experiment.

#### Extinction

The discontinuing of a reinforcement of a previously reinforced behavior (i.e., responses no longer produce reinforcement); the primary effect is a decrease in the frequency of the behavior until it reaches a prereinforced level or ultimately ceases to occur.

#### Extinction burst

An increase in the frequency of responding when an extinction procedure is initially implemented.

#### Procedural fidelity

The extent to which procedures in all phases and conditions of an experiment, including baseline, are implemented correctly.

#### Punishment

A basic principle of behavior describing a response–consequence functional relation in which a response is followed immediately by a stimulus change that decreases future occurrences of that type of behavior.

#### Reinforcement

A basic principle of behavior describing a response–consequence functional relation in which a response is followed immediately by a stimulus change that results in similar responses occurring more often.

#### Replication

(a) repeating conditions within an experiment to determine the reliability of effects and increase internal validity. (b) repeating whole experiments to determine the generality of findings of previous experiments to other subjects, settings, and/or behaviors.

#### Social validity

Refers to the extent to which target behaviors are appropriate, intervention procedures are acceptable, and important and significant changes in target and collateral behaviors are produced.

#### Systematic replication

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An experiment in which the researcher purposefully varies one or more aspects of an earlier experiment. A systematic replication that reproduces the results of previous research not only demonstrates the reliability of the earlier findings, but also adds to the external validity of the earlier findings by showing that the same effect can be obtained under different conditions.

### Target behavior

The response class selected for intervention; can be defined either functionally or topographically.

### Treatment drift

An undesirable situation in which the independent variable of an experiment is applied differently during later stages than it was at the outset of the study.

### Treatment integrity

The extent to which the independent variable is applied exactly as planned and described, and no other unplanned variables are administered inadvertently along with the planned treatment.

### Type I error

An error that occurs when a researcher concludes that the independent variable had an effect on the dependent variable, when no such relation exists; a false positive.

### Type II error

An error that occurs when a researcher concludes that the independent variable had no effect on the dependent variable, when in truth it did; a false negative.

## I. Personnel Supervision and Management

I.1. Identify the benefits of using behavior-analytic supervision (e.g., improved client outcomes, improved staff performance and retention).
I.2. Identify and apply strategies for establishing effective supervisory relationships (e.g., executing supervisor / supervisee contracts, establishing clear expectations, giving and accepting feedback).
I.3. Identify and implement methods that promote equity in supervision practices.
I.4. Select supervision goals based on an assessment of the supervisee's skills, cultural variables, and the environment.
I.5. Identify and apply empirically validated and culturally responsive performance management procedures (e.g., modeling, practice, feedback, reinforcement, task clarification, manipulation of response effort).
I.6. Apply a function-based approach (e.g., performance diagnostics) to assess and improve supervisee behavior.
I.7. Make data-based decisions about the efficacy of supervisory practices.

Personnel Supervision and Management

**I.1. Identify the benefits of using behavior-analytic supervision**

(e.g., improved client outcomes, improved staff performance and retention).

Behavior-analytic supervision is a structured oversight process where experienced behavior analysts provide guidance, mentoring, and support to less experienced practitioners or trainees. This supervisory model emphasizes the application of behavior analysis principles to enhance the effectiveness of interventions and improve both client and staff outcomes. Key benefits of behavior-analytic supervision include:

**1. Improved Client Outcomes**

**Enhanced Intervention Fidelity:** Supervision ensures that interventions are implemented with high fidelity, following established behavior-analytic protocols. This fidelity promotes the effectiveness of interventions, leading to better outcomes for clients.

**Data-Driven Decision Making:** Through regular supervision, practitioners can receive feedback on data collection and interpretation. This focus on evidence-based practices helps ensure interventions are aligned with client needs, thereby enhancing treatment effectiveness.

**Tailored Interventions:** Supervisors can provide insights into customizing interventions based on client-specific data and behavior analysis principles. This individualized approach often results in more significant behavioral improvements for clients.

**2. Improved Staff Performance**

**Skill Development:** Behavior-analytic supervision facilitates ongoing professional development by providing opportunities for staff to enhance their skills in applying behavior analysis techniques effectively. This process includes direct observation, feedback, and hands-on training.

**Increased Competence and Confidence:** Supervised practice often boosts a staff member's competence and confidence in delivering behavior-analytic services. The constructive feedback provided during supervision can help practitioners refine their skills and tackle challenges more effectively.

**Reduction of Burnout:** Regular supervisory support can address practitioners' stress and feelings of isolation by providing a platform for discussing challenges and solutions. This supportive environment can reduce burnout and increase job satisfaction among staff.

**3. Improved Staff Retention**

**Professional Growth Opportunities:** Providing behavior-analytic supervision allows organizations to invest in staff development, which is often linked to job satisfaction. When employees see clear pathways for growth and development, they are more likely to remain with the organization.

**Positive Work Environment:** Supervision that emphasizes collaboration, mutual respect, and constructive feedback fosters a positive workplace culture. A supportive work environment contributes to employee loyalty and decreases turnover rates.

**Clear Expectations and Accountability:** Behavior-analytic supervision helps establish clear expectations regarding job performance and accountability. Employees who understand their roles and responsibilities often experience higher job satisfaction and engagement.

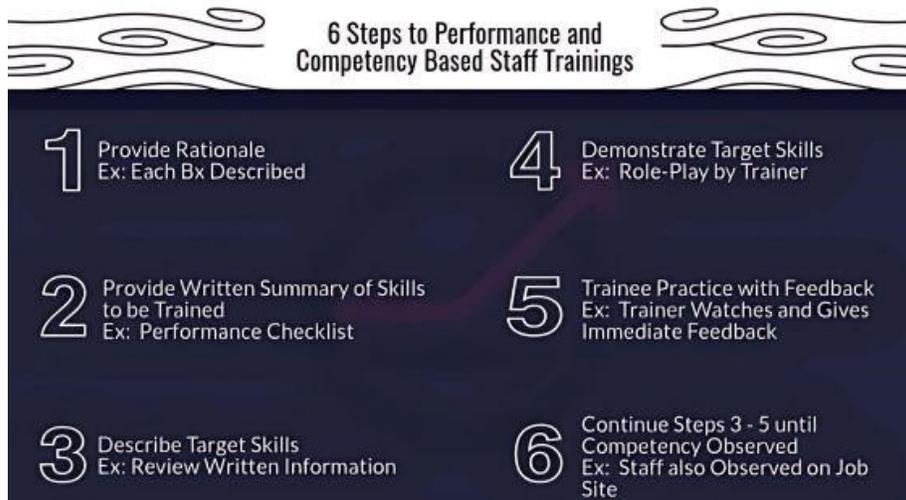
#### 4. Enhanced Ethical Practices

**Emphasis on Ethical Standards:** Behavior-analytic supervision reinforces ethical guidelines and professional best practices. Supervisors can model ethical behavior and equip supervisees with the skills to navigate ethical dilemmas effectively.

**Monitoring Ethical Compliance:** Regular supervision helps ensure compliance with ethical standards and regulations in behavior analysis, contributing to a culture of accountability within the organization.

### **I.2. Identify and apply strategies for establishing effective supervisory relationships (e.g., executing supervisors, supervisee contracts, establishing clear expectations, giving and accepting feedback).**

Effective supervision in behavior analysis is essential for the professional development of supervisees and the delivery of high-quality interventions. The Behavior Analyst Certification Board (BACB) provides guidelines that emphasize the importance of establishing effective supervisory relationships. Below are key strategies outlined in the guidelines for creating and maintaining these effective relationships.



### 1. Executing Supervisor-Supervisee Contracts

**Importance of Contracts:** Establishing a supervisor-supervisee contract is a foundational strategy for defining the parameters and expectations of the supervisory relationship. This contract serves several purposes:

**Clarification of Roles:** Clearly defines the roles and responsibilities of both the supervisor and the supervisee, preventing misunderstandings and fostering accountability.

**Goal Setting:** Outlines specific goals, objectives, and professional development targets for the supervisee. This goal-oriented approach promotes focus and helps track progress over time.

**Communication:** Specifies preferred methods and frequency of communication, ensuring that both parties are aware of how and when feedback will be exchanged.

By initiating a contract at the beginning of the supervisory relationship, both the supervisor and supervisee can enter into the relationship with a mutual understanding that aids in establishing trust and collaboration.

### 2. Establishing Clear Expectations

**Setting Clear Expectations:** Clearly articulated expectations are critical for the supervisory relationship. Effective supervisors should take the following steps:

**Define Professional Standards:** Outline the professional and ethical standards expected of the supervisee. This includes adherence to the BACB Ethics Code and other relevant professional guidelines.

**Performance Expectations:** Set practical expectations related to performance, including skill applications, client interactions, and data collection practices.

**Routine Check-Ins:** Schedule regular meetings to review expectations and provide updates on progress. This practice fosters ongoing communication and allows for adjustments based on evolving needs.

Establishing clear expectations helps supervisees understand their roles and responsibilities and contributes to their growth as competent practitioners in the field.

### 3. Giving and Accepting Feedback

**Feedback as a Tool for Growth:** Feedback is a critical element of BCBA supervision and can be characterized as follows:

**Constructive Feedback:** Supervisors should provide specific, actionable, and balanced feedback on performance. This includes recognizing strengths as well as identifying areas for improvement. Research shows that constructive feedback significantly enhances learning outcomes (Hattie & Timperley, 2007).

**Encourage Self-Assessment:** Encourage supervisees to engage in self-reflection and self-assessment. This fosters critical thinking and promotes an understanding of their own practice, facilitating personal growth.

**Acceptance of Feedback:** Supervisors should model acceptance of feedback from supervisees regarding the supervisory process. Creating an open dialogue encourages transparency and fosters a supportive environment where supervisees feel comfortable expressing their thoughts.

### 4. Building Trust and Rapport

**Cultivating Trust:** Trust is a foundational component of any effective supervisory relationship. To build trust, supervisors should:

**Be Consistent and Reliable:** Follow through on obligations and commitments, creating reliability in the supervisory process.

**Practice Active Listening:** Engage in active listening and validate the supervisee's experiences and concerns. This helps create a sense of partnership and investment in the supervisory relationship.

**Support and Empathy:** Demonstrate understanding and empathy for the challenges faced by supervisees. By providing a supportive atmosphere, supervisors can bolster morale and reduce feelings of isolation.

Conclusion

Establishing effective supervisory relationships is critical for enhancing the professional development of behavior analysts and improving client outcomes. By executing supervisor-supervisee contracts, establishing clear expectations, and fostering a culture of constructive feedback, supervisors can create an environment conducive to learning, growth, and ethical practice. The BCBA guidelines emphasize that effective supervision is characterized by collaboration, transparency, and continuous improvement.

The dynamics of the supervisory relationship have significant implications for the development of competencies in behavior analysis and the delivery of high-quality services to clients, ensuring a standard of excellence in practice.

#### References

Hattie, J. & Timperley, H. (2007). The power of feedback. *Review of Educational Research*, 77(1), 81-112.

### **I.3. Identify and implement methods that promote equity in supervision practices.**

Equity in supervision practices is essential to create an inclusive and supportive environment for all behavior analysts, particularly for those from diverse backgrounds or underrepresented groups. The Behavior Analyst Certification Board (BACB) emphasizes the importance of culturally competent supervision. Below is an overview of methods to identify and implement strategies that promote equity in BCBA supervision practices.

#### 1. Understanding Equity in Supervision

**Definition of Equity:** Equity in supervision refers to the fair treatment, access, opportunity, and advancement of all supervisees, while actively working to identify and eliminate barriers that have historically led to discrimination or inequity. It emphasizes not just equality (treating everyone the same) but recognizing and responding to the unique needs and circumstances of individuals.

#### 2. Creating a Culturally Competent Supervisory Environment

**Cultural Awareness:** Supervisors should educate themselves about the cultural backgrounds and experiences of their supervisees. Understanding different cultural perspectives and values enhances communication and rapport.

**Methods:**

**Training and Workshops:** Participate in ongoing training on cultural competence, diversity, and inclusivity. This education equips supervisors with the tools to address cultural dynamics effectively (Sue et al., 2009).

**Self-Reflection:** Supervisors should engage in self-reflection to recognize their biases and assumptions, facilitating a more open-minded approach to supervision.

**Encouraging Open Dialogue:** Fostering an environment where supervisees feel safe to share their cultural perspectives, experiences, and concerns is crucial for promoting equity.

**Methods:**

**Regular Check-Ins:** Hold regular meetings that invite supervisees to discuss their experiences and provide feedback on the supervision process.

**Feedback Mechanisms:** Utilize anonymous feedback tools to allow supervisees to express concerns without fear of repercussions.

### 3. Implementing Fair and Equitable Evaluation Processes

**Standardized Criteria:** Establish clear, standardized criteria for evaluations and feedback that applies to all supervisees, regardless of their backgrounds. This helps eliminate bias and ensures that evaluations are based solely on performance and competencies.

**Methods:**

**Objective Metrics:** Develop objective measures for assessing performance, incorporating data-driven decision-making into evaluations.

**Collaborative Goal Setting:** Engage in a collaborative goal-setting process where both supervisors and supervisees contribute to defining behavioral objectives and professional development targets.

**Regular Review of Evaluation Practices:** Periodically review evaluation and feedback processes to identify and rectify any patterns of bias or inequity.

### 4. Supporting Diverse Supervisees

**Tailored Professional Development:** Recognize that supervisees may have different learning styles, experiences, and needs. Providing tailored support can help close equity gaps.

**Methods:**

**Individualized Supervision Plans:** Work with supervisees to create personalized supervision plans that consider their unique strengths, areas for growth, and career aspirations.

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**Mentorship Opportunities:** Provide mentorship programs that connect less experienced supervisees with diverse role models in the field of behavior analysis.

**Accessibility of Resources:** Ensure that all supervisees have equal access to professional development resources, training materials, and opportunities for advancement.

### 5. Encouraging Diversity in Supervision Models

**Diverse Perspectives:** Actively seek to incorporate diverse perspectives into supervision models and practices. This can enhance the supervisory relationship and provide richer insights into behavior analysis.

**Methods:**

**Diverse Supervisory Teams:** Form supervisory teams that reflect a variety of backgrounds and experiences, allowing supervisees to benefit from multiple viewpoints.

**Collaborative Learning:** Encourage collaborative learning among supervisees from diverse backgrounds to share experiences and strategies.

### References

Sue, S., Cheng, J. K. Y., Saad, C. S., & Cheng, J. (2012). Asian American mental health: A cultural psychology perspective. *Asian American Journal of Psychology*, 3(1), 30-41.

### **I.4. Select supervision goals based on an assessment of the supervisee's skills, cultural variables, and the environment.**

#### Selecting Supervision Goals: A Comprehensive Approach

Selecting appropriate supervision goals is a critical component of effective behavior-analytic supervision. Goals must be tailored to the unique skills of the supervisee, consider cultural variables that may affect learning and practice, and account for the environmental context in which the supervisee operates. This holistic approach not only aids the professional development of the supervisee but also enhances the quality of services delivered to clients.

#### 1. Assessing the Supervisee's Skills

**Skill Assessment:** Prior to goal selection, a thorough evaluation of the supervisee's competencies is essential. This assessment should encompass a variety of skills relevant to behavior analysis, including technical skills, ethical decision-making, data collection techniques, and intervention strategies.

Methods for Skill Assessment:

**Direct Observation:** Observing the supervisee during practice provides insight into their application of behavior-analytic principles. It allows the supervisor to identify strengths and areas for development in real-time contexts.

**Self-Assessment Tools:** Encourage the supervisee to use self-assessment checklists based on key competencies required for certification and practice. This fosters self-reflection and helps identify personal goals.

**Feedback Mechanisms:** Incorporate feedback from peers, clients, and supervisors to provide a comprehensive view of the supervisee's abilities. This multi-source feedback promotes a more balanced understanding of their skills.

**Setting Goals:** Based on the assessment, supervisors can collaboratively establish specific, measurable goals that target areas of improvement while leveraging the supervisee's existing strengths.

## 2. Considering Cultural Variables

**Cultural Competence in Supervision:** Understanding and integrating cultural variables into the goal-setting process is crucial for promoting equity and effectiveness in supervision. Cultural competence affects how supervisees communicate, learn, and apply behavior-analytic principles.

Methods for Cultural Assessment:

**Cultural History and Context:** Engage in conversations with supervisees about their cultural backgrounds and beliefs. This dialogue builds rapport and informs the supervisory process.

**Contextual Training:** Offer training that focuses on understanding cultural influences and the importance of culturally responsive practices in behavior analysis.

**Setting Culturally Relevant Goals:** Goals should be framed in a context that is culturally sensitive and relevant. For example, training on culturally responsive interventions or strategies for working with diverse populations may be beneficial. Supervisors should ensure that goals reflect respect for the supervisee's cultural identity and promote best practices that are inclusive.

## 3. Evaluating the Environmental Context

**Environmental Assessment:** The environment in which the supervisee operates significantly influences their practice and potential challenges. Factors such as the settings of service delivery, available resources, and the characteristics of the client population must be considered.

Methods for Environmental Assessment:

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**Observation of the Work Environment:** Understanding the physical and social dynamics of the supervisee's work setting can provide valuable insight into the supports and challenges they face.

**Resource Availability:** Discuss the tools and resources available to the supervisee, including access to data collection tools or support staff, which can influence their practice.

**Setting Contextual Goals:** Goals that are practical, achievable, and relevant to the specific environmental context maximize the likelihood of success. For instance, if a supervisee works in a school context with limited resources, goals might focus on developing low-cost interventions or time-efficient strategies for data collection.

### 4. Collaborative Goal Setting

**Team Approach:** Involving supervisees in the goal-setting process fosters ownership and engagement. Supervision is most effective when it is a partnership rather than a top-down approach.

**Methods for Collaboration:**

**Goal-Setting Sessions:** Schedule dedicated meetings to discuss and finalize supervision goals. This collaborative approach encourages input from the supervisee and enhances motivation.

**Ongoing Reviews:** Conduct regular check-ins to review progress toward established goals, allowing for adjustments based on new insights, challenges, or changes in circumstances.

### References

Association for Behavior Analysis International (ABAI). (2019)

**I.5. Identify and apply empirically validated and culturally responsive performance management procedures (e.g., modeling, practice, feedback, reinforcement, task clarification, manipulation of response effort).**

### Identifying and Applying Empirically Validated and Culturally Responsive Performance Management Procedures

The effective supervision of behavior analysts hinges on the application of performance management procedures that are both empirically validated and culturally responsive. These procedures can enhance the skill development of supervisees while ensuring that practices are

sensitive to diverse cultural contexts. Below, we explore key performance management procedures and their relevance in behavior-analytic supervision.

### 1. Modeling

**Definition and Importance:** Modeling involves the supervisor demonstrating specific skills, techniques, or behaviors that the supervisee is expected to learn and replicate. This direct demonstration provides a clear example of how to effectively implement behavior-analytic practices.

**Application:**

**Live Demonstrations:** Conduct live demonstrations during supervision meetings or in practice settings. For instance, supervisors can model a behavior intervention session with a client, allowing supervisees to observe effective engagement strategies.

**Video Modeling:** Use video recordings of effective practices that can be reviewed and analyzed together. This method allows for repeated viewing and discussion, which can enhance learning.

**Cultural Responsiveness:** When modeling, supervisors should be mindful of cultural considerations. It is important for supervisors to model behaviors and interventions that are appropriate and respectful of the supervisee's cultural context, ensuring that practices do not inadvertently reinforce stereotypes or biases.

### 2. Practice

**Definition:** Practice involves providing supervisees with opportunities to implement learned skills in real or simulated scenarios. This hands-on approach reinforces learning and builds confidence.

**Application:**

**Role-Playing:** Conduct role-playing exercises in which supervisees can practice interventions and receive immediate feedback. This technique is effective in helping supervisees develop verbal and non-verbal communication skills with clients.

**Field Training:** Assign supervisees to implement procedures under supervision during actual client interactions. Provide support and guidance as they apply techniques learned through modeling and feedback.

**Cultural Considerations:** Incorporate culturally relevant scenarios in practice sessions. Tailoring practice exercises to reflect the cultural backgrounds of the populations the supervisees will be working with enhances the relevance of the training.

### 3. Feedback

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**Definition:** Feedback is critical in the performance management process. It involves providing supervisees with specific information about their performance, highlighting strengths and areas for improvement.

**Application:**

**Constructive Feedback:** Deliver feedback regularly and ensure it is constructive, specific, and actionable. For example, during a post-session review, focus on specific instances that illustrate both effective and ineffective practices.

**Guided Self-Reflection:** Encourage supervisees to self-assess their performance and identify areas for improvement alongside feedback from the supervisor.

**Cultural Sensitivity:** When giving feedback, consider the cultural background of the supervisee. Use culturally appropriate language and approaches to ensure feedback is well-received and understood. Be sensitive to differing cultural norms regarding communication and hierarchy.

### 4. Reinforcement

**Definition:** Reinforcement is a key component of behavior management strategies. It involves providing positive consequences following desired behaviors to increase the likelihood of those behaviors occurring in the future.

**Application:**

**Positive Reinforcement:** Encourage supervisees by recognizing accomplishments and providing praise for improvements in their practice. This could include verbal accolades, formal recognition in team meetings, or small rewards for achieving goals.

**Individualized Reinforcement:** Tailor reinforcement strategies to fit the preferences and motivations of each supervisee. Understanding what motivates each individual can enhance their engagement and improve performance.

**Cultural Responsiveness:** Ensure that reinforcement strategies are culturally relevant. Different cultures may have varying interpretations of praise and recognition, so it is essential to use reinforcement methods that resonate with the supervisee's values and preferences.

### 5. Task Clarification

**Definition:** Task clarification involves providing clear, concise, and detailed instructions regarding what is expected in specific tasks or interventions.

**Application:**

**Clear Guidelines:** Provide written guidelines, checklists, or flowcharts that outline procedures and expectations. Visual aids can help supervisees understand the steps involved and eliminate ambiguity.

**Review Sessions:** Use supervision meetings to clarify tasks and expectations, allowing supervisees to ask questions and seek clarification on procedures.

**Cultural Considerations:** Be aware of language barriers or differences in communication styles. Ensure that task instructions are easily understood and consider providing materials in the language preferred by the supervisee or using interpreters when necessary.

## 6. Manipulation of Response Effort

**Definition:** Manipulating response effort involves altering the effort required to perform particular tasks or behaviors. Reducing the effort required can enhance compliance and skill acquisition.

**Application:**

**Task Simplification:** Break complex tasks into smaller, more manageable components. Gradually increase task complexity as the supervisee becomes more competent.

## 6. Manipulation of Response Effort (continued)

**Application (continued):**

**Support Tools:** Provide tools, resources, or systems that make it easier for the supervisee to complete tasks efficiently. For example, simplifying data collection methods or providing templates for documentation can reduce the cognitive load and enhance accuracy in performance.

**Scaffolding:** Gradually increase the complexity of tasks once the supervisee has successfully mastered simpler forms, thereby supporting skill acquisition while managing response effort.

**Cultural Considerations:** When manipulating response effort, ensure that adaptations are relevant and culturally appropriate. What may seem like a simplification to one individual could be interpreted differently in another cultural context. Discussing expectations and adjustments with the supervisee can provide insights into how to best support their learning style.

Chan, D. W., & Watanabe, J. (2020). Culturally responsive supervision using inclusive practices in applied behavior analysis. *Behavior Analysis in Practice*, 13(2), 245-253.

Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). *Applied Behavior Analysis* (3rd ed.). Pearson.

Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research*, 77(1), 81-112.

Lenk, J., & Rost, J. (2018). Understanding culturally responsive practices in the supervision of behavior analysts. *International Journal of Behavioral Consultation and Therapy*, 13(1), 1-8.

**I.6. Apply a function-based approach (e.g., performance diagnostics) to assess and improve supervisee behavior.**

Applying a Function-Based Approach to Assess and Improve Supervisee Behavior

In the realm of behavior analysis, applying a function-based approach to supervision is essential for identifying and addressing the specific factors that influence supervisee behavior. This process not only facilitates the development of skills but also enhances the overall effectiveness of behavior-analytic practice. By utilizing performance diagnostics, supervisors can systematically assess supervisee behavior, determine the functions underlying observed performance, and implement targeted interventions for improvement.

1. Understanding the Function-Based Approach

Definition: A function-based approach focuses on understanding the reasons behind specific behaviors by analyzing the antecedents (triggers) and consequences (outcomes) of those behaviors. In the context of supervision, it aims to identify factors that influence supervisee performance and engagement.

Goals:

To systematically analyze the behavior of supervisees in real-time situations.

To provide data-driven insights into performance issues.

To develop tailored interventions based on identified functions of behavior.

2. Performance Diagnostics

Performance Diagnostics: This method involves a detailed assessment of supervisee behavior to understand what influences their performance and identify areas that may require intervention.

Performance diagnostics typically includes the following steps:

**Define the Target Behavior:** Clearly articulate the behavior that needs to be assessed. For instance, target behaviors might include data collection accuracy, implementation fidelity of interventions, or engagement with clients.

**Data Collection:** Gather data on the performance of the target behavior using a variety of methods, such as direct observation, self-reporting, and peer feedback. The data collected should provide a comprehensive overview of the supervisee's performance over time and across different contexts.

**Identify Antecedents and Consequences:** Analyze the situational factors (antecedents) that prompt the behavior and the outcomes (consequences) that follow. This may involve observing patterns during supervision sessions and considering aspects such as environmental conditions, support available, and feedback received.

**Behavioral Function Assessment:** Apply techniques such as functional behavior assessments (FBAs) or functional assessments to systematically identify why a supervisee engages in certain behaviors. Consider whether behaviors are maintained by positive reinforcement, negative reinforcement, escape, or other motivational factors.

### 3. Implementing Function-Based Interventions

After diagnosing performance issues, the supervisor can implement interventions tailored to the identified functions of supervisee behavior:

**Skill Development:** If data indicates that a lack of skill usage is causing performance issues, role-playing, modeling, and direct training on relevant skills can be employed to enhance competence.

**Environmental Adjustments:** Modify the work environment to reduce distractions, enhance resource access, or provide clearer instructions. This may involve streamlining data collection processes or ensuring adequate support materials are available.

**Reinforcement Strategies:** Utilize reinforcement effectively. For instance, if a supervisee is motivated by recognition, providing positive feedback for improvements can reinforce desired behaviors.

**Goal Setting:** Collaboratively set achievable performance goals tailored to the specific needs identified during the diagnostic process. Specific, measurable goals help clarify expectations and allow for tracking progress over time.

**Regular Monitoring and Feedback:** Continuously monitor the supervisee's progress and provide timely feedback. Adjust interventions based on ongoing assessments, ensuring that the support remains relevant and effective.

### 4. Building a Supportive Supervisory Relationship

**Communicative Environment:** Maintaining open lines of communication between the supervisor and supervisee fosters trust and encourages feedback. A supportive atmosphere helps supervisees feel safe discussing challenges, allowing for more accurate assessments and active participation in the improvement process.

**Cultural Sensitivity:** When applying a function-based approach, supervisors should be aware of the cultural contexts of their supervisees. Acknowledge the diverse backgrounds and experiences that may influence behavior and performance. This sensitivity can enhance the effectiveness of assessments and interventions.

Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). *Applied Behavior Analysis* (3rd ed.). Pearson.

Kazdin, A. E. (2017). *Evidence-Based Treatments in Childhood and Adolescence* (2nd ed.). Oxford University Press

### **I.7. Make data-based decisions about the efficacy of supervisory practices.**

#### **Making Data-Based Decisions about the Efficacy of Supervisory Practices**

In the field of behavior analysis, effective supervision is essential for the development of practice and the improvement of client outcomes. To ensure that supervisory practices are functioning optimally, it is crucial to adopt a data-based approach to decision-making. This involves systematically collecting, analyzing, and interpreting data related to supervisory practices to assess their effectiveness and inform ongoing improvements.

#### **1. Importance of Data-Based Decision Making**

**Definition:** Data-based decision-making refers to systematic collection and analysis of quantitative and qualitative data to guide actions and improvements in practice. In the context of supervision, it allows supervisors to evaluate the effectiveness of their supervisory strategies and interventions.

#### **Benefits:**

**Objective Insights:** Data collection provides objective insights into supervisory practices, moving away from reliance on anecdotal evidence or subjective impressions.

**Continuous Improvement:** By analyzing data trends, supervisors can identify areas that require enhancement, enabling continuous improvement in the supervisory process.

**Accountability:** Data-driven approaches enhance accountability for both supervisors and supervisees, fostering a culture of transparency and professional growth.

## 2. Collecting Data on Supervisory Practices

### Types of Data to Collect:

**Performance Data:** Measure the performance of supervisees in implementing behavior-analytic interventions, providing insights into the effectiveness of training and supervision.

**Feedback Data:** Collect feedback from supervisees regarding the supervisory relationship, the clarity of expectations, and the quality of feedback received.

**Session Records:** Document the content and structure of supervision sessions, including the goals addressed, the practices discussed, and the outcomes achieved.

### Methods of Data Collection:

**Observation:** Supervisors can conduct observations during supervision sessions to assess engagement, communication styles, and the implementation of supervisory practices.

**Surveys and Questionnaires:** Administer periodic surveys to gather quantitative and qualitative feedback from supervisees regarding their supervision experiences, satisfaction levels, and perceived effectiveness.

**Data Logs:** Maintain logs of supervision activities, noting specific interventions, feedback loops, and performance changes over time.

## 3. Analyzing Data

### Analysis Techniques:

**Trend Analysis:** Utilize graphical representation methods (e.g., line graphs) to visualize trends in supervisee performance over time, providing a clear overview of improvements or declines.

**Comparative Analysis:** Compare data before and after implementing specific supervisory strategies to assess their impact. Identify patterns that emerge in supervisee performance following new interventions.

**Qualitative Analysis:** Analyze qualitative feedback for common themes and insights related to supervisory experience. Identifying specific areas where supervisees feel supported or challenged can guide future practice.

## 4. Making Informed Decisions

### Using Data to Drive Adjustments:

**Identify Areas for Improvement:** Use data to pinpoint specific aspects of supervisory practice that may require modification. For instance, if data suggest that supervisees are struggling with a particular skill, additional training or resources can be allocated to that area.

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**Evaluate the Impact of Changes:** After implementing changes to supervisory practices based on data analysis, continue to collect and review data to evaluate the efficacy of those changes. This iterative process ensures that supervision remains responsive to the needs of supervisees.

**Incorporating Stakeholder Input:**

**Engagement with Supervisees:** Engage supervisees in discussions about data analysis and decision-making processes. Collaborating with supervisees helps build trust and buy-in for changes made in the supervisory process.

**Stakeholder Reviews:** Involve other professionals or stakeholders in reviewing supervisory practices and data. Perspectives from a broader team can enhance insights and facilitate more comprehensive decisions.

### 5. Continuous Improvement

**Iterative Cycle:** Effective supervisory practices should be viewed as part of an iterative cycle of assessment and improvement. Continually assessing data and adapting practices fosters a culture of learning.

**Professional Development:** Encourage supervisors to seek ongoing professional development in data analysis and behavior analytic practices. This investment in skills ensures that supervisors are equipped to make informed decisions and continuously improve their supervisory methods.

### **Quiz on Section I - BACB 6th Edition Task List**

#### **1. What is the primary benefit of behavior-analytic supervision?**

- A) Increased paperwork
- B) Improved client outcomes
- C) Longer work hours
- D) Reduced communication

#### **2. Behavior-analytic supervision enhances staff performance by:**

- A) Limiting their opportunities for skill development
- B) Providing feedback and support

- C) Increasing administrative duties
- D) Isolating staff from coworkers

**3. Increased staff retention can result from:**

- A) Unclear expectations
- B) A lack of supervision
- C) Effective supervisory relationships
- D) Rigid work structures

**4. When establishing supervisory relationships, executing a supervisor-supervisee contract is important because it:**

- A) Limits communication
- B) Defines roles and expectations
- C) Increases workload without benefit
- D) Keeps supervision informal

**5. Which of the following is an effective strategy for establishing clear expectations?**

- A) Establishing vague guidelines
- B) Modeling specific behaviors
- C) Avoiding discussions about performance
- D) Limiting the frequency of meeting

**6. Giving feedback during supervision should primarily be:**

- A) Vague and generic
- B) Specific and actionable
- C) Negative and critical
- D) Rare and infrequent

**7. What is the core component of promoting equity in supervision practices?**

- A) Ignoring cultural differences
- B) Individualized goal setting
- C) Uniformity in approach regardless of context
- D) Unbalanced feedback distribution

**8. When selecting supervision goals, it is essential to consider:**

- A) The interests of the supervisor only
- B) An assessment of the supervisee's skills
- C) Only formal qualifications of the supervisee
- D) Feedback from clients exclusively

**9. Cultural variables in supervision should be assessed by:**

- A) Focusing solely on language differences
- B) Engaging in open discussions about cultural backgrounds
- C) Ignoring cultural influences
- D) Assuming all supervisees have the same background

**10. Which of the following strategies is an example of modeling in supervision?**

- A) Discussing theoretical concepts only
- B) Demonstrating a behavior intervention for the supervisee
- C) Providing written feedback with no demonstration
- D) Conducting a lecture with no practical application

**11. Performance management procedures should be:**

- A) Rigorous and inflexible
- B) Empirically validated and culturally responsive
- C) Standardized without exception

D) Solely based on the supervisor's preferences

**12. Feedback should be sought after:**

A) Only negative experiences

B) Unsolicited from the supervisee

C) Key learning experiences

D) Each session to maintain a high-stakes environment

**13. Manipulation of response effort in performance management aims to:**

A) Increase the difficulty of tasks

B) Reduce the effort required for task completion

C) Encourage competition among supervisees

D) Maintain a high level of task demand at all times

**14. Data-based decisions about supervisory practices should include:**

A) Anecdotal evidence from gossip

B) Systematic collection and analysis of relevant data

C) Supervisor intuition alone

D) Focus solely on client feedback

**15. What is essential when applying a function-based approach to assess supervisee behavior?**

A) Identifying antecedents and consequences

B) Ignoring data collection

C) Using only qualitative methods

D) Keeping assessments informal

**16. An example of a performance diagnostic is:**

- A) A one-time observation
- B) A structured functional behavior assessment
- C) Relying solely on subjective feedback
- D) Providing general praise

**17. Which method can help promote equity in supervisory relationships?**

- A) Standardizing all supervision practices
- B) Ignoring individual supervisee needs
- C) Providing individualized support based on cultural context
- D) Focusing solely on clinical skills

**18. When implementing feedback, it is important for supervisors to:**

- A) Only provide positive feedback regardless of performance
- B) Deliver feedback in a manner that is clear and specific
- C) Withhold feedback until the end of the supervision period
- D) Rely on feedback from others without reviewing supervisee performance

**19. Selecting supervision goals should consider the supervisors:**

- A) Personal interests outside of behavior analysis
- B) Skills, cultural variables, and environmental contexts
- C) Preferences for casual meetings over formal sessions
- D) Opinions on supervision methods exclusively

**20. Which of the following best demonstrates culturally responsive supervision?**

- A) Applying the same strategies to all supervisees without consideration of background
- B) Acknowledging and integrating diverse perspectives and practices into supervision
- C) Focusing only on traditional behavior-analytic techniques
- D) Guaranteeing that all communication is in English only

## ASSIGNMENT

Applied Supervision Assignment Plan, revised to include one required video assignment per section of the BACB 6th Edition Task List. These video tasks are designed to demonstrate applied competence and support mastery through direct modeling or verbal explanation.

### **Section I: Personnel Supervision and Management**

1. Staff Training Protocol & Checklist

Write a training protocol for prompting strategies and include fidelity measures.

2. BST for Behavior Reduction

Deliver and document BST to an RBT on a BIP procedure.

3. Performance Feedback & Fidelity Tracking

Provide feedback over time and graph improvement in fidelity.

4. Staff Reinforcement Plan

Create a reinforcement system for RBT behavior that supports client success.

Video Assignment:

“Conducting a Staff Training Using BST” – Record yourself conducting BST (instruction, modeling, rehearsal, feedback) for an RBT on a skill (e.g., data collection, redirection, prompting).

### **Section I**

#### **Primary Books**

##### **(Foundational Sources)**

1. Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). Applied behavior analysis (3rd ed.). Pearson.

(Chapters related to staff training, performance management, and supervision basics.)

## THE BCBA EXAM STUDY GUIDE

2. Daniels, A. C., & Bailey, J. S. (2014). *Performance management: Changing behavior that drives organizational effectiveness* (5th ed.). Aubrey Daniels International.

(Classic book on applying behavior analysis to supervise, train, and manage staff behavior effectively.)

3. Reid, D. H., Parsons, M. B., & Green, C. W. (2012). *The supervisor's guidebook: Evidence-based strategies for promoting work quality and enjoyment among human service staff* (2nd ed.). Habilitative Management Consultants.

(Widely used for ABA supervisor training — focuses on feedback, reinforcement, and staff development.)

### **Journal Articles**

#### **(Foundational Research and Best Practices)**

1. Reid, D. H., & Parsons, M. B. (2007). Motivating human service staff: Supervisory strategies for maximizing work effort and enjoyment. *Journal of Positive Behavior Interventions*, 9(3), 137–147. <https://doi.org/10.1177/10983007070090030201>

(Focuses on practical, reinforcement-based staff supervision strategies.)

2. Turner, L. B., Fischer, A. J., & Luiselli, J. K. (2016). Practicing behavior analysts' adherence to ethical guidelines in their professional activities. *Behavior Analysis in Practice*, 9(4), 307–312. <https://doi.org/10.1007/s40617-016-0124-5>

(Ethical adherence in supervision.)

3. Sellers, T. P., Valentino, A. L., & LeBlanc, L. A. (2016). Recommended practices for individual supervision of aspiring behavior analysts. *Behavior Analysis in Practice*, 9(4), 274–286. <https://doi.org/10.1007/s40617-016-0130-7>

(Modern best practices for BCBA supervision.)

4. Sellers, T. P., Carr, J. E., & Nosik, M. R. (2019). Professionalism and ethics in supervision. *Behavior Analysis in Practice*, 12(3), 542–555.  
<https://doi.org/10.1007/s40617-019-00343-2>

(Ethical and professional requirements for supervisory practices.)

## **Webpages**

### **(Reputable Official Sources)**

1. Behavior Analyst Certification Board (BACB). (2022). BCBA 6th Edition Task List and Content Outline.

<https://www.bacb.com/bcba-6th-edition-task-list/>

(Lays out expectations for supervision skills and ethics.)

2. BACB Supervision Resources. (n.d.).

<https://www.bacb.com/supervision-resources/>

(Provides BACB’s official expectations for providing supervision, including required training, documentation, and feedback.)

3. Association for Behavior Analysis International (ABAI). (n.d.). What is Behavior Analysis?

<https://www.abainternational.org/about-us/about-behavior-analysis.aspx>

(Discusses training and supervision as critical to quality assurance.)

## THE BCBA EXAM STUDY GUIDE

4. Cambridge Center for Behavioral Studies. (n.d.). Behavior Analysis: A Brief Overview.

<https://behavior.org/behavior-analysis/>

(General overview of why supervision ensures client protection and quality.)

## References

Creating a full APA (7th edition) reference list covering the foundational sources for content in the BACB 6th Edition Task List requires references for major textbooks, research articles, and seminal works in behavior analysis. Below is a professional reference page including key sources that align with the 6th Edition Task List's content areas.

Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis*, 1(1), 91–97. <https://doi.org/10.1901/jaba.1968.1-91>

Baer, D. M., Wolf, M. M., & Risley, T. R. (1987). Some still-current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis*, 20(4), 313–327. <https://doi.org/10.1901/jaba.1987.20-313>

Bijou, S. W., & Baer, D. M. (1961). *Child development: A systematic and empirical theory* (Vol. 1). Appleton-Century-Crofts.

Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). *Applied behavior analysis* (3rd ed.). Pearson.

Ferster, C. B., & Skinner, B. F. (1957). *Schedules of reinforcement*. Appleton-Century-Crofts.

Fisher, W. W., Piazza, C. C., & Roane, H. S. (2021). *Handbook of applied behavior analysis* (2nd ed.). Guilford Press.

Johnston, J. M., & Pennypacker, H. S. (2009). *Strategies and tactics of behavioral research and practice* (3rd ed.). Routledge.

Lovaas, O. I. (1987). Behavioral treatment and normal educational and intellectual functioning in young autistic children. *Journal of Consulting and Clinical Psychology*, 55(1), 3–9. <https://doi.org/10.1037/0022-006X.55.1.3>

Michael, J. (1993). Establishing operations. *The Behavior Analyst*, 16(2), 191–206. <https://doi.org/10.1007/BF03392623>

Sidman, M. (1989). *Coercion and its fallout*. Authors Cooperative.

Skinner, B. F. (1938). *The behavior of organisms: An experimental analysis*. Appleton-Century.

Skinner, B. F. (1953). *Science and human behavior*. Macmillan.

Sundberg, M. L., & Partington, J. W. (1998). *Teaching language to children with autism or other developmental disabilities*. AVB Press.

Vollmer, T. R., & Northup, J. (1996). Some implications of functional analysis technology for applied settings: An emphasis on establishing operations. *Research in Developmental Disabilities*, 17(3), 229–243. [https://doi.org/10.1016/0891-4222\(96\)00007-1](https://doi.org/10.1016/0891-4222(96)00007-1)

## THE BCBA EXAM STUDY GUIDE

Applied Behavior Analysis by John O. Cooper, Timothy E. Heron, and William L. Heward:

Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis*, 1(1), 91–97.

Lovaas, O. I. (1987). Behavioral treatment and normal educational and intellectual functioning in young autistic children. *Journal of Consulting and Clinical Psychology*, 55(1), 3–9.

Skinner, B. F. (1938). *The behavior of organisms: An experimental analysis*. Appleton-Century.

Catania, A. C. (2013). *Learning* (5th ed.). Sloan Publishing.

Kazdin, A. E. (2011). *Single-case research designs: Methods for clinical and applied settings* (2nd ed.). Oxford University Press.

Cooper, J. O., Heron, T. E., & Heward, W. L. (2007). *Applied behavior analysis* (2nd ed.). Pearson.

Stokes, T. F., & Baer, D. M. (1977). An implicit technology of generalization. *Journal of Applied Behavior Analysis*, 10(2), 349–367.

Sundel, M., & Sundel, S. S. (2013). *Behavior change in the classroom: Self-management interventions* (2nd ed.). Guilford Press.

Iwata, B. A., Dorsey, M. F., Slifer, K. J., Bauman, K. E., & Richman, G. S. (1994). Toward a functional analysis of self-injury. *Journal of Applied Behavior Analysis*, 27(2), 197–209.

Vollmer, T. R., & Iwata, B. A. (1992). Differential reinforcement as treatment for behavior disorders: Procedural and functional variations. *Research in Developmental Disabilities*, 13(4), 393–417.

Bailey, J. and Burch, M. (2016). *Ethics for Behavior Analysts*, Third Edition. New York, New York: Routledge Taylor and Francis Group

Carr, J. E., Nosik, M.R. and Luke, M.M. (2018). On the use of the term 'frequency' in applied behavior analysis. *Journal of Applied Behavior Analysis*, 51: 436-439

Carr, J. E., Wilder, D. A., Majdalany, L., Mathisen, D., and Strain, L. A. (2013). An Assessment-based Solution to a Human Services Performance Problem: An Initial Evaluation of the Performance Diagnostic Checklist for Human Services. *Behavior Analysis in Practice*, 6(1), 16-32

Cooper, J., Heron, T. and Heward, W. (2019). *Applied Behavior Analysis*, Third Edition. Hoboken, New Jersey: Pearson Education, Inc.

Ferster, C.B., and Skinner, B.F. (1957). *Schedules of Reinforcement*. Englewood Cliffs, NJ: Prentice Hall, 420-463

Fienup, D.M., Covey, D.P., Critchfield, T.S., (2010). Teaching Brain-Behavior Relationships Economically with Stimulus Equivalence Technology. *Journal of Applied Behavior Analysis*, 43, 19-33. doi: 10.1901/jaba/2010.43-19

Gresham, F.M. (1989). Assessment of Treatment Integrity in School Consultation and Prereferral Intervention. *School Psychology Review*, 18, 37-50

Grubbs, K., and Papazian, J. (2019). Improving Graduate School Student Performance in Practicum Settings Using the Performance Diagnostic Checklist - Human Services. (Poster Presentation at the Texas Association of Behavior Analysis Conference. Fort Worth, TX)

Hayes, S.C., Barnes-Holmes, D., and Roche, B. (2001). *Relational Frame Theory: A Post-Skinnerian Account of Human Language and Cognition*. New York: Kluwer Academic/Plenum Publishers

## THE BCBA EXAM STUDY GUIDE

Langthorne, P. and McGill, P. (2009). A Tutorial on the Concept of the Motivating Operation and its Importance to Application.

Behavior Analysis in Practice, 2(2), 22-31

Laraway, S., Snyderski, S., Michael, J., & Poling, A. (2003). Motivating operations and terms to describe them: Some further refinements. Journal of Applied Behavior Analysis, 36(4), 407-414.

Malott, Richard W. and Shane, Joseph T. (2014). Principles of Behavior, Seventh Edition. Upper Saddle River, New Jersey: Pearson Education, Inc.

Mayer, G. R., Sulzer-Azaroff, B., and Wallace, M. (2019). Behavior Analysis for Lasting Change, Fourth Edition. Cornwall-on Hudson, New York: Sloan Publishing

Merbitz, Charles T., Merbitz, Nancy Hanson, Pennypacker, Henry S. (2015). On Terms: Frequency and Rate in Applied Behavior Analysis. The Behavior Analyst, Volume 39.10.1007/40614-015-0048-z

Michael, J. (1982). Skinner's Elementary Verbal Relations: Some New Categories. The Analysis of Verbal Behavior, 1, 1-3

Moxley, R.A. (2004). Pragmatic Selectionism: The Philosophy of Behavior Analysis. The Behavior Analyst Today, Volume 5 (1), 108-25

Parsons, M. B. and Reid, D. H. (1995). Training Residential Supervisors to Provide Feedback for Maintaining Staff Teaching Skills with People who have Severe Disabilities. Journal of Applied Behavior Analysis, Fall; 28(3), 317-322

Reid, D. H. and Parsons, M. B. (1995). Comparing Choice and Questionnaire Measures of the Acceptability of a Staff Training Procedure. Journal of Applied Behavior Analysis, Spring; 28(2), 95-96

Reid, D. H. and Parsons, M. B. (2002). Working with Staff to Overcome Challenging Behavior Among People who have Severe Disabilities: A Guide for Getting Support Plans Carried Out. Morganton, NC: Habilitative Management Consultants

Skinner, B.F. (1968). The Technology of Teaching. New York: Appleton-Century-Crofts

Steege, M.W. and Watson, T.S. (2019). Conducting School-Based Functional Behavioral Assessments, Third Edition: A Practitioner's Guide. New York, New York: The Guilford Press

### **References by sections of the study guide:**

#### **Section A**

1. Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis*, 1(1), 91–97. <https://doi.org/10.1901/jaba.1968.1-91>

(Foundational article establishing the dimensions of ABA — description, prediction, control)

2. Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). *Applied behavior analysis* (3rd ed.). Pearson.

(Comprehensive textbook covering philosophical assumptions, radical behaviorism, dimensions of ABA, and distinctions among behaviorism, EAB, and ABA.)

3. Skinner, B. F. (1953). *Science and human behavior*. Macmillan.

(Skinner's seminal work explaining radical behaviorism, determinism, and the scientific study of behavior.)

## THE BCBA EXAM STUDY GUIDE

4. Skinner, B. F. (1974). *About behaviorism*. Vintage Books.

(Further clarification of radical behaviorism vs. mentalism.)

5. Michael, J. (1993). Establishing operations. *The Behavior Analyst*, 16(2), 191–206.  
<https://doi.org/10.1007/BF03392677>

(Michael's work helps underpin concepts like pragmatism and selectionism, which are critical philosophical assumptions.)

6. Pierce, W. D., & Cheney, C. D. (2017). *Behavior analysis and learning* (6th ed.). Routledge.

(Broad coverage of behaviorism, experimental analysis of behavior (EAB), and applied behavior analysis (ABA) distinctions.)

7. Johnston, J. M., & Pennypacker, H. S. (2009). *Strategies and tactics of behavioral research* (3rd ed.). Routledge.

(Focuses on empiricism, parsimony, and experimental design as core scientific foundations.)

8. Moore, J. (2015). *Conceptual foundations of behavior analysis*. Sloan Publishing.

(Deep dive into the philosophy of science underpinning behavior analysis, including radical behaviorism.)

### **Webpages**

1. Behavior Analyst Certification Board (BACB). (2022). BCBA 6th Edition Task List and Content Outline.

<https://www.bacb.com/bcba-6th-edition-task-list/>

(Primary source for task list definitions, expectations, and competency descriptions.)

2. Behavior Analyst Certification Board (BACB). (n.d.). About Behavior Analysis.

<https://www.bacb.com/about-behavior-analysis/>

(Overview of applied behavior analysis, philosophical assumptions, and history.)

3. Association for Behavior Analysis International (ABAI). (n.d.). What is Behavior Analysis?

<https://www.abainternational.org/about-us/about-behavior-analysis.aspx>

(Explains the goals of behavior analysis — description, prediction, control — and distinctions among behaviorism, EAB, and ABA.)

4. University of West Florida (UWF) ABA Program. (n.d.). Philosophical Foundations of Behavior Analysis.

<https://aba.uwf.edu/philosophy.asp>

(Nice simple explanations about determinism, empiricism, pragmatism, selectionism, etc.)

5. Cambridge Center for Behavioral Studies. (n.d.). Behavior Analysis: A Brief Overview.

<https://behavior.org/behavior-analysis/>

(High-quality, layperson-friendly breakdowns of radical behaviorism, experimental analysis, and

applied behavior analysis.)

## Section B

### Books

#### (Primary Sources)

1. Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). Applied behavior analysis (3rd ed.). Pearson.

(Primary text for all concepts like reinforcement, punishment, extinction, stimulus control, MOs, SD's, SΔs, etc.)

2. Pierce, W. D., & Cheney, C. D. (2017). Behavior analysis and learning (6th ed.). Routledge.

(Goes deeper into respondent conditioning, stimulus control, compound schedules, and generalization.)

3. Michael, J. (1993). Establishing operations. *The Behavior Analyst*, 16(2), 191–206.  
<https://doi.org/10.1007/BF03392677>

(Key source for motivating operations — setting events, value-altering effects, behavior-altering effects.)

4. Skinner, B. F. (1938). *The behavior of organisms: An experimental analysis*. Appleton-Century.

(Primary for respondent and operant conditioning basics.)

5. Skinner, B. F. (1953). *Science and human behavior*. Macmillan.

(Explains reinforcement, punishment, extinction, generalization, and discrimination in natural environments.)

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## Journal Articles

### (Critical Concepts)

1. Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis*, 1(1), 91–97. <https://doi.org/10.1901/jaba.1968.1-91>

(Source for generalization and concept of effectiveness.)

2. Michael, J. (2004). Concepts and principles of behavior analysis. *The Behavior Analyst Today*, 5(3), 362–365.

(Concise summary of behavior analytic concepts, including reinforcement and punishment processes.)

3. Sidman, M. (1960). *Tactics of scientific research: Evaluating experimental data in psychology*. Basic Books.

(Source for stimulus control, stimulus equivalence, and discrimination training.)

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## Webpages

### (Supporting, Simplified, or Quick-Reference Sources)

## THE BCBA EXAM STUDY GUIDE

1. Behavior Analyst Certification Board (BACB). (2022). BCBA 6th Edition Task List and Content Outline.

<https://www.bacb.com/bcba-6th-edition-task-list/>

(Defines expectations for reinforcement, punishment, motivating operations, extinction, stimulus control, etc.)

2. Association for Behavior Analysis International (ABAI). (n.d.). What is Behavior Analysis?

<https://www.abainternational.org/about-us/about-behavior-analysis.aspx>

(Reinforcement, punishment, extinction, stimulus control explained accessibly.)

3. Cambridge Center for Behavioral Studies. (n.d.). Behavior Analysis: A Brief Overview.

<https://behavior.org/behavior-analysis/>

(Good lay explanations of reinforcement and punishment basics.)

4. University of West Florida (UWF) ABA Program. (n.d.). Concepts and Principles of Behavior Analysis.

(UWF had some content directly teaching respondent vs operant behavior, motivating operations, schedules.)

(Page is sometimes within their course materials, so it may not be permanently linkable.)

### **Section C**

#### **Books**

**(Primary Sources)**

1. Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). *Applied behavior analysis* (3rd ed.). Pearson.

(Chapters 4, 5, 6, and 7 — everything on measurement, graphing, and visual analysis.)

2. Johnston, J. M., & Pennypacker, H. S. (2009). *Strategies and tactics of behavioral research* (3rd ed.). Routledge.

(Excellent deeper reference for issues like IOA, validity, reliability, and threats to data integrity.)

3. Kazdin, A. E. (2011). *Single-case research designs: Methods for clinical and applied settings* (2nd ed.). Oxford University Press.

(Strong reference for interpreting visual displays, levels, trends, variability, and demonstrating functional relations.)

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**Journal Articles**

**(Foundational and Applied)**

1. Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis*, 1(1), 91–97. <https://doi.org/10.1901/jaba.1968.1-91>

(Establishes why measurement must be reliable, valid, and show experimental control.)

2. Mudford, O. C., Taylor, S. A., & Martin, N. T. (2009). Continuous and discontinuous measurement: A brief review. *Behavior Modification*, 33(2), 128–150. <https://doi.org/10.1177/0145445508320969>

## THE BCBA EXAM STUDY GUIDE

(Review of partial interval, momentary time sampling, and continuous measurement methods.)

3. Parsonson, B. S., & Baer, D. M. (1978). The analysis and presentation of graphic data. In T. R. Kratochwill (Ed.), *Advances in school psychology* (pp. 103–145). Erlbaum.

(Guide on how to properly construct and interpret graphs.)

4. Hartmann, D. P., Barrios, B. A., & Wood, D. D. (1978). Issues in the measurement of behavior. *Behavior Therapy*, 9(4), 544–559.

(Explores threats to measurement validity, reliability, and accuracy.)

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### Webpages

#### (Supplementary/Official Sources)

1. Behavior Analyst Certification Board (BACB). (2022). BCBA 6th Edition Task List and Content Outline.

<https://www.bacb.com/bcba-6th-edition-task-list/>

(Direct expectations on measurement, graphing, interpretation.)

2. Association for Behavior Analysis International (ABAI). (n.d.). What is Behavior Analysis?

<https://www.abainternational.org/about-us/about-behavior-analysis.aspx>

(Briefly touches on the importance of precise, data-driven decision-making.)

3. Cambridge Center for Behavioral Studies. (n.d.). Behavior Analysis: A Brief Overview.

<https://behavior.org/behavior-analysis/>

(Explains behavior analysis relies heavily on objective data collection.)

4. University of West Florida (UWF) ABA Program. (n.d.). Measurement in Applied Behavior Analysis.

(UWF program outlines types of measurement procedures — like event recording, timing, permanent product — if still available.)

## **Section D**

### **Primary Books**

#### **(Foundational Sources)**

1. Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). Applied behavior analysis (3rd ed.). Pearson.

(Chapters 7, 8, and 9 cover all experimental design content including basics of internal validity and SCEDs.)

2. Kazdin, A. E. (2011). Single-case research designs: Methods for clinical and applied settings (2nd ed.). Oxford University Press.

(Deep explanation of experimental designs, internal validity threats, and visual analysis.)

3. Johnston, J. M., & Pennypacker, H. S. (2009). Strategies and tactics of behavioral research (3rd ed.). Routledge.

## THE BCBA EXAM STUDY GUIDE

(Covers internal vs external validity, independent vs dependent variables, control tactics.)

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### Journal Articles

#### (Key Peer-Reviewed Foundations)

1. Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis*, 1(1), 91–97. <https://doi.org/10.1901/jaba.1968.1-91>

(Importance of demonstrating functional relations experimentally.)

2. Sidman, M. (1960). *Tactics of scientific research: Evaluating experimental data in psychology*. Basic Books.

(Foundational explanations of experimental control, internal validity, and functional relations.)

3. Barlow, D. H., Nock, M. K., & Hersen, M. (2008). *Single case experimental designs: Strategies for studying behavior change* (3rd ed.). Allyn & Bacon.

(Details alternating treatment design, multiple baseline, withdrawal/reversal designs, etc.)

(Technically a book, but widely cited similarly to articles because of its applied focus.)

4. Gast, D. L., & Ledford, J. R. (2018). *Single case research methodology: Applications in special education and behavioral sciences* (3rd ed.). Routledge.

(A strong modern source on variations of SCEDs — great for explaining why researchers choose specific designs.)

## Webpages

### (Reputable, for Supplementary or Basic Study Reference)

1. Behavior Analyst Certification Board (BACB). (2022). BCBA 6th Edition Task List and Content Outline.

<https://www.bacb.com/bcba-6th-edition-task-list/>

(Outlines official expectations for experimental design knowledge.)

2. Association for Behavior Analysis International (ABAI). (n.d.). What is Behavior Analysis?

<https://www.abainternational.org/about-us/about-behavior-analysis.aspx>

(Mentions the use of scientific experimental designs in behavior analysis.)

3. Cambridge Center for Behavioral Studies. (n.d.). Behavior Analysis: A Brief Overview.

<https://behavior.org/behavior-analysis/>

(Emphasizes the necessity of demonstrating functional relations and experimentation.)

4. University of West Florida (UWF) ABA Program. (n.d.). Single-Case Research Designs.

(Their ABA program often has excellent overviews of reversal designs, multiple baseline, and changing criterion— if accessible.)

## Section E

## Primary Books

### (Foundational Sources)

1. Bailey, J. S., & Burch, M. R. (2016). *Ethics for behavior analysts* (3rd ed.). Routledge.

(Primary textbook almost everyone uses for ABA ethics training.)

2. Bailey, J. S., & Burch, M. R. (2022). *Ethics for behavior analysts* (4th ed.). Routledge.

(Newest edition — even better if you want the most updated examples including cultural humility and social media issues.)

3. Behavior Analyst Certification Board (BACB). (2020). *Ethics Code for Behavior Analysts*.

<https://www.bacb.com/wp-content/uploads/2020/11/Ethics-Code-for-Behavior-Analysts-210201.pdf>

(The actual 2022 BACB Ethics Code we follow — essential.)

4. Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). *Applied behavior analysis* (3rd ed.). Pearson.

(Chapters on professional and ethical compliance code; references to informed consent, client dignity, supervision.)

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## Journal Articles

### (Important Ethical Case Studies, Commentary, and Research)

1. Brodhead, M. T. (2015). Maintaining professional relationships in an interdisciplinary setting: Strategies for navigating nonbehavioral ethical challenges. *Behavior Analysis in Practice*, 8(1),

70–78. <https://doi.org/10.1007/s40617-015-0041-5>

(Handling interdisciplinary teams ethically.)

2. Brodhead, M. T., Quigley, S. P., & Wilczynski, S. M. (2018). A call for the integration of cultural humility in behavior analysis. *Behavior Analysis in Practice*, 11(1), 50–60. <https://doi.org/10.1007/s40617-018-0233-0>

(Critical paper on cultural humility, now formally part of the BACB expectations.)

3. Turner, L. B., Fischer, A. J., & Luiselli, J. K. (2016). Practicing behavior analysts' adherence to ethical guidelines in their professional activities. *Behavior Analysis in Practice*, 9(4), 307–312. <https://doi.org/10.1007/s40617-016-0124-5>

(Study on how BCBA's report ethical decision-making and barriers.)

4. Taylor, B. A., LeBlanc, L. A., & Nosik, M. R. (2019). Ethical considerations for applied behavior analysis practitioners during the COVID-19 pandemic. *Behavior Analysis in Practice*, 13(2), 312–320. <https://doi.org/10.1007/s40617-020-00429-x>

(Modern application of ethical guidelines in complex situations — telehealth, client safety, etc.)

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## Webpages

### (Official, Reputable Sources)

1. Behavior Analyst Certification Board (BACB). (2022). Ethics Code for Behavior Analysts.

<https://www.bacb.com/ethics-information/>

(Main BACB ethics page — links to codes, training modules, violations.)

## THE BCBA EXAM STUDY GUIDE

2. Association for Behavior Analysis International (ABAI). (n.d.). Special Interest Groups: Behavior Analyst Certification Board (BACB).

<https://www.abainternational.org/special-interest-groups/bacb.aspx>

(Support information about ethics and guidelines from ABAI.)

3. Cambridge Center for Behavioral Studies. (n.d.). Ethical Considerations in Behavior Analysis.

<https://behavior.org/behavior-analysis/>

(General reinforcement of ethical standards and client protection.)

4. University of West Florida (UWF) ABA Program. (n.d.). Ethical Practices in ABA.

(Supplemental course page with ethics modules, if accessible.)

### **Section F**

#### **Primary Books**

##### **(Foundational Sources)**

1. Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). Applied behavior analysis (3rd ed.). Pearson.

(Chapter 25: Functional Behavior Assessment, plus earlier chapters on behavior measurement and assessment strategies.)

2. O'Neill, R. E., Albin, R. W., Storey, K., Horner, R. H., & Sprague, J. R. (2015). *Functional assessment and program development for problem behavior: A practical handbook* (3rd ed.). Cengage Learning.

(Classic manual for conducting FBAs — indirect, descriptive, and experimental assessments.)

3. Hanley, G. P., Iwata, B. A., & McCord, B. E. (2003). Functional analysis of problem behavior: A review. *Journal of Applied Behavior Analysis*, 36(2), 147–185.  
<https://doi.org/10.1901/jaba.2003.36-147>

(Landmark paper summarizing the procedures and variations of functional analysis.)

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## Journal Articles

### (Important Peer-Reviewed Foundations)

1. Iwata, B. A., Dorsey, M. F., Slifer, K. J., Bauman, K. E., & Richman, G. S. (1982/1994). Toward a functional analysis of self-injury. *Journal of Applied Behavior Analysis*, 27(2), 197–209.  
<https://doi.org/10.1901/jaba.1994.27-197>

(Original experimental functional analysis protocol.)

2. Carr, E. G. (1977). The motivation of self-injurious behavior: A review of some hypotheses. *Psychological Bulletin*, 84(4), 800–816. <https://doi.org/10.1037/0033-2909.84.4.800>

(Explores early functional thinking about challenging behavior.)

3. DeLeon, I. G., & Iwata, B. A. (1996). Evaluation of a multiple-stimulus presentation format for assessing reinforcer preferences. *Journal of Applied Behavior Analysis*, 29(4), 519–533.  
<https://doi.org/10.1901/jaba.1996.29-519>

## THE BCBA EXAM STUDY GUIDE

(Introduces the Multiple Stimulus Without Replacement (MSWO) preference assessment.)

4. Fisher, W., Piazza, C. C., Bowman, L. G., Hagopian, L. P., Owens, J. C., & Slevin, I. (1992). A comparison of two approaches for identifying reinforcers for persons with severe and profound disabilities. *Journal of Applied Behavior Analysis*, 25(2), 491–498.  
<https://doi.org/10.1901/jaba.1992.25-491>

(Comparison of choice assessments — important for F-5 and F-6 preference assessments.)

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### Webpages

#### (Reputable, Official Sources)

1. Behavior Analyst Certification Board (BACB). (2022). BCBA 6th Edition Task List and Content Outline.

<https://www.bacb.com/bcba-6th-edition-task-list/>

(Outlines expectations for assessment knowledge.)

2. Association for Behavior Analysis International (ABAI). (n.d.). About Behavior Analysis.

<https://www.abainternational.org/about-us/about-behavior-analysis.aspx>

(Mentions assessment as a key component of applied behavior analysis.)

3. Cambridge Center for Behavioral Studies. (n.d.). Behavior Analysis: A Brief Overview.

<https://behavior.org/behavior-analysis/>

(Reinforces the importance of assessing behavior before intervening.)

4. University of West Florida (UWF) ABA Program. (n.d.). Functional Behavior Assessment and Functional Analysis Resources.

(If accessible, this contains clear descriptions of indirect, descriptive, and experimental FBA procedures.)

## **Section G**

### **Primary Books**

#### **(Foundational Sources)**

1. Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). Applied behavior analysis (3rd ed.). Pearson.

(Covers every procedure listed in Section G — Chapters 11–25 are critical.)

2. Miltenberger, R. G. (2016). Behavior modification: Principles and procedures (6th ed.). Cengage Learning.

(Excellent for shaping, chaining, prompting, generalization, self-management — noticeably clear procedural examples.)

3. Pierce, W. D., & Cheney, C. D. (2017). Behavior analysis and learning (6th ed.). Routledge.

(Great for compound schedules, conditioned reinforcement, and advanced procedure explanations.)

## Journal Articles

### (Essential Classic Studies and Reviews)

1. Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis*, 1(1), 91–97. <https://doi.org/10.1901/jaba.1968.1-91>

(Outlines generalization, effectiveness, technological descriptions of procedures.)

2. Lovaas, O. I. (1987). Behavioral treatment and normal educational and intellectual functioning in young autistic children. *Journal of Consulting and Clinical Psychology*, 55(1), 3–9. <https://doi.org/10.1037/0022-006X.55.1.3>

(Application of discrete trial training, reinforcement, extinction, prompting.)

3. Horner, R. H., & McDonnell, J. (1987). Teaching generalized behavior to students with severe handicaps. *Journal of the Association for Persons with Severe Handicaps*, 12(2), 84–94. <https://doi.org/10.1177/154079698701200203>

(Generalization and maintenance strategies.)

4. Cooper, L. J., Wacker, D. P., Sasso, G., Reimers, T., & Donn, L. (1990). Using self-management procedures to improve the classroom behavior of students with learning disabilities. *Behavioral Disorders*, 15(3), 157–166.

(Self-management procedures.)

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## Webpages

### (Reputable, Official Sources)

1. Behavior Analyst Certification Board (BACB). (2022). BCBA 6th Edition Task List and Content Outline.

<https://www.bacb.com/bcba-6th-edition-task-list/>

(Outlines the required knowledge about behavior-change procedures.)

2. Association for Behavior Analysis International (ABAI). (n.d.). What is Behavior Analysis?

<https://www.abainternational.org/about-us/about-behavior-analysis.aspx>

(Discusses core procedures like reinforcement and extinction.)

3. Cambridge Center for Behavioral Studies. (n.d.). Behavior Analysis: A Brief Overview.

<https://behavior.org/behavior-analysis/>

(Summarizes common ABA strategies like reinforcement, prompting, and token economies.)

4. University of West Florida (UWF) ABA Program. (n.d.). ABA Procedures and Applications.

(Often has simplified outlines of DTT, chaining, DRO, DRA, self-management, prompting systems, etc.)

## **Section H**

### **Primary Books**

#### **(Foundational Sources)**

1. Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). Applied behavior analysis (3rd ed.). Pearson.

## THE BCBA EXAM STUDY GUIDE

(Covers intervention selection, social validity, contextual fit, least intrusive methods, and data-based decision-making.)

2. Bailey, J. S., & Burch, M. R. (2016). *Ethics for behavior analysts* (3rd ed.). Routledge.

(Covers ethical selection of interventions, client assent, least restrictive alternatives.)

3. Bailey, J. S., & Burch, M. R. (2022). *Ethics for behavior analysts* (4th ed.). Routledge.

(Newer edition with expanded examples on social validity, risk-benefit analysis, client-centered planning.)

4. Miltenberger, R. G. (2016). *Behavior modification: Principles and procedures* (6th ed.). Cengage Learning.

\*(Good applied examples of intervention planning, reinforcement-based procedures, extinction, and punishment.)

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### Journal Articles

#### (Key Research and Conceptual Foundations)

1. Wolf, M. M. (1978). Social validity: The case for subjective measurement or how applied behavior analysis is finding its heart. *Journal of Applied Behavior Analysis*, 11(2), 203–214. <https://doi.org/10.1901/jaba.1978.11-203>

(Foundational paper on the concept of social validity.)

2. Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis*, 1(1), 91–97. <https://doi.org/10.1901/jaba.1968.1-91>

(Highlights social significance, effectiveness, and technological clarity — key for selecting interventions.)

3. Horner, R. H., Carr, E. G., Strain, P. S., Todd, A. W., & Reed, H. K. (2002). Problem behavior interventions for young children with autism: A research synthesis. *Journal of Autism and Developmental Disorders*, 32(5), 423–446. <https://doi.org/10.1023/A:1020593922901>

(Supports evidence-based intervention selection.)

4. Slocum, T. A., Detrich, R., Wilczynski, S. M., Spencer, T. D., & Lewis, T. (2014). The evidence-based practice of applied behavior analysis. *The Behavior Analyst*, 37(1), 41–56. <https://doi.org/10.1007/s40614-014-0005-x>

(Directly discusses evidence-based decision making in ABA.)

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## Webpages

### (Official and Supplemental)

1. Behavior Analyst Certification Board (BACB). (2022). BCBA 6th Edition Task List and Content Outline.

<https://www.bacb.com/bcba-6th-edition-task-list/>

(Specifies how BCBAAs must select, design, and evaluate interventions.)

## THE BCBA EXAM STUDY GUIDE

2. BACB Ethics Code for Behavior Analysts (2022).

<https://www.bacb.com/ethics-information/>

(Governs intervention selection, assent, cultural responsiveness, risk/benefit analysis.)

3. Association for Behavior Analysis International (ABAI). (n.d.). What is Behavior Analysis?

<https://www.abainternational.org/about-us/about-behavior-analysis.aspx>

(Briefly touches on using evidence-based interventions and social validity.)

4. Cambridge Center for Behavioral Studies. (n.d.). Behavior Analysis: A Brief Overview.

<https://behavior.org/behavior-analysis/>

(Covers evidence-based decision making in applied behavior analysis.)

### Section I

#### Primary Books

##### (Foundational Sources)

1. Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). Applied behavior analysis (3rd ed.). Pearson.

(Chapters related to staff training, performance management, and supervision basics.)

2. Daniels, A. C., & Bailey, J. S. (2014). Performance management: Changing behavior that drives organizational effectiveness (5th ed.). Aubrey Daniels International.

(Classic book on applying behavior analysis to supervise, train, and manage staff behavior effectively.)

3. Reid, D. H., Parsons, M. B., & Green, C. W. (2012). *The supervisor's guidebook: Evidence-based strategies for promoting work quality and enjoyment among human service staff* (2nd ed.). Habilitative Management Consultants.

(Widely used for ABA supervisor training — focuses on feedback, reinforcement, and staff development.)

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## Journal Articles

### (Foundational Research and Best Practices)

1. Reid, D. H., & Parsons, M. B. (2007). Motivating human service staff: Supervisory strategies for maximizing work effort and enjoyment. *Journal of Positive Behavior Interventions*, 9(3), 137–147. <https://doi.org/10.1177/10983007070090030201>

(Focuses on practical, reinforcement-based staff supervision strategies.)

2. Turner, L. B., Fischer, A. J., & Luiselli, J. K. (2016). Practicing behavior analysts' adherence to ethical guidelines in their professional activities. *Behavior Analysis in Practice*, 9(4), 307–312. <https://doi.org/10.1007/s40617-016-0124-5>

(Ethical adherence in supervision.)

3. Sellers, T. P., Valentino, A. L., & LeBlanc, L. A. (2016). Recommended practices for individual supervision of aspiring behavior analysts. *Behavior Analysis in Practice*, 9(4), 274–286. <https://doi.org/10.1007/s40617-016-0130-7>

(Modern best practices for BCBA supervision.)

4. Sellers, T. P., Carr, J. E., & Nosik, M. R. (2019). Professionalism and ethics in supervision. *Behavior Analysis in Practice*, 12(3), 542–555. <https://doi.org/10.1007/s40617-019-00343-2>

(Ethical and professional requirements for supervisory practices.)

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## Webpages

### (Reputable Official Sources)

1. Behavior Analyst Certification Board (BACB). (2022). BCBA 6th Edition Task List and Content Outline.

<https://www.bacb.com/bcba-6th-edition-task-list/>

(Lays out expectations for supervision skills and ethics.)

2. BACB Supervision Resources. (n.d.).

<https://www.bacb.com/supervision-resources/>

(Provides BACB's official expectations for providing supervision, including required training, documentation, and feedback.)

3. Association for Behavior Analysis International (ABAI). (n.d.). What is Behavior Analysis?

<https://www.abainternational.org/about-us/about-behavior-analysis.aspx>

(Discusses training and supervision as critical to quality assurance.)

4. Cambridge Center for Behavioral Studies. (n.d.). Behavior Analysis: A Brief Overview.

<https://behavior.org/behavior-analysis/>

(General overview of why supervision ensures client protection and quality.)

\*None of the text is novel by the authors of this training manual, but rather a compilation of definitions and content from the aforementioned citations. Due to the internet compiling information from numerous sources any unlisted authors were only left out if the citation was not provided with the content but is not to be taken as original information created by the author. However, this compilation is a trademarked product as its use of cited information, examples and quizzes was created in a novel format and cannot be resold without the author's consent.\*

## BCBA FINAL MOCK EXAM 1

Marc always takes care of his cat. His mother told her husband that

Marc is kind and that is why he takes care of his cat. The neighbor said

“Why does Marc take such good care of his cat?” The mother replied "Because he is very kind." What does this BEST exemplify?

- A. **Circular reasoning**
  - B. Parsimony
  - C. Pragmatism
  - D. Explanatory Fiction
2. Kathy is a BCBA who is going on a trip to Ireland. Jackson will take care of his case load while he is away. Kathy made her lesson plan very easy to follow and detailed for the supervising substitute. Which characteristic of ABA does this BEST represent?
- A. **Technological**
  - B. Conceptually systematic
  - C. Effective
  - D. Generality
3. Lois is a BCBA working with Olivia. Patty keeps pointing to her knee and crying. Because she is non verbal the supervisor suggested to take her to the doctor suggesting she could have injured it playing outside.
- A. A functional relation
  - B. Explanatory Fiction
  - C. A hypothetical Construct

**D. A private event**

4. Larry was taught 6 ways to greet a friend. "Hello," "hola" "what's up?" "Hi", "hey"! And "hey there." How are these six behaviors related?

- A. They are functionally equivalent**
- B. They are topographical equivalent**
- C. They are temporally equivalent**
- D. They are relational frames**

5. Joey often act like a class clown, makes jokes and acts silly in the class room. This is often followed by the children snickering, telling him how funny he is. What is the most likely function of this behavior?

- A. Attention**
- B. Tangible**
- C. Sensory**
- D. Escape**

6. Chrissy is a BCBA who works is a grammar school with children diagnosed with autism and who have learning disabilities. While getting her hair done, she was reading an magazine article that a small pet could improve the social skills of children. She immediately stops at Jonny's pet shop and picked up a rabbit. She writes a treatment plan for all her students to spend time with the rabbit. What philosophical assumption did Chrissy violate?

- A. Empiricism**
- B. Philosophical doubt**
- C. Parsimony**
- D. Experimentation**

7. Jax was a BCBA® training Jeb on how to use restitutional overcorrection to reduce a behavior of aggression with peers. Jax has another client who exhibits aggression towards others but an FBA shows the function is attention and he is using extinction to address the behavior.

Why is Jax using two different interventions for the same behavior?

- A. **The behaviors are functionally different**
- B. The behaviors
- C. The behaviors are topographical different
- D. The behaviors are formally different

8. **Which verbal operant under the direct control of a motivating operation?**

- A. Tact
- B. Echoic
- C. Intraverbal
- D. **Mand**

9. **What are the features of an echoic?**

- A. Point to point correspondence
- B. Formal similarity
- C. Neither A or B
- D. **Both A and B**

10. **What of the following are features of an tact?**

- A. **Neither A or B**
- B. Point to point correspondence

- C. Formal similarity
- D. Both A and B

**11. Which example is the best operational definition of a behavior?**

- A. Chow looked angry
- B. Jen was all wet
- C. John was sleeping
- D. **Tommy throws a ball**

**12.** Wayne is a BCBA who is concerned that his RBT therapist Simon may be engaging in observer drift. What should Wayne do?

- A. **Collect IOA data**
- B. Review the behavior goal
- C. Review the intervention plans
- D. Rewrite the behavior plans

**13. Which of the following are features of a mand?**

- A. **Neither A or B**
- B. Point-to-point correspondence
- C. Formal similarity
- D. Both A and B

**14. What are the features of an autoclitic?**

- A. **Neither A or B**

- B. Point to point correspondence
- C. Formal similarity
- D. Both A and B

**15. What are the features of an intraverbal?**

- A. **Neither A or B**
- B. Point to point correspondence
- C. Formal similarity
- D. Both A and B

**16.** Jessica had to get up for a big interview so she set her alarm clock, asked her boyfriend to call her and set a timer on his phone so she wouldn't oversleep. These events form which stimulus class?

- A. **Temporal**
- B. Formal
- C. Arbitrary
- D. Functional

**17. Verbally requesting to use the bathroom, performing the sign language hand gesture and using an icon for the bathroom from a PECS board. Which response class do these behaviors make up?**

- A. Temporal
- B. Arbitrary
- C. Formal
- D. **Functional**

18. Frank is learning how to paint as a vocational skill. His teacher showed him that he can use a paint brush to stroke the paint on, a roller to roll the paint on or a can of spray paint to spray it on the walls. These different methods of painting are an example of

- A. relation frame
- B. Stimulus generalization
- C. Maintenance
- D. **Response generalization**

19. Kevin goes to his MMA sessions every day at 10 AM. Before he goes, he always picks up his gym bag and then gives his dog his favorite bone treat. Jason has been doing this for about three months now. One day Jason picked up his gym bag when he wasn't going to his MMA session, and he noticed his dog was already salivating. What was the gym bag acting as?

- A. Unconditioned stimulus
- B. A response
- C. a Reinforcer
- D. **Conditioned stimulus**

20. Terry orders food for dinner every Friday night from a specific Japanese restaurant. Whenever he gets the food and opens it, he gives his dog. The noodles that come with his soup. His dog loves the noodles and salivates as soon as he sees them. Terry's doctor told him he could no longer eat Japanese food because of a health issue so now he orders a salad that does not come with any extra treat that he can give his dog. The first couple times the salad came his dog would salivate, but would not receive any type of a treat. After about seven times of getting his salad, his dog stopped salivating. What is this an example of?

- A. **Respondent extinction**

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- B. Respondent conditioning
- C. Unpairing
- D. Operant extinction

21. Jack has a zoom meeting every day at 12 PM. Jack's daughter Allie begins to cry as soon as Jason goes on the zoom meeting. Jack then tells her to please be quiet when he is in his meeting. After he gave her this verbal notice, Allie begins to cry, louder and more frequently. What did Jack's verbal notice act as?

- A. A positive punisher
- B. A negative reinforcer
- C. A negative punisher
- D. **A positive reinforcer**

**22. Giving positive verbal praise after a desirable behavior that results in an increase in that behavior is an example of a:**

- A. A differential reinforcer
- B. **Generalized conditioned reinforcer**
- C. Backup reinforcer
- D. Primary reinforcer

23. Timmy is working as a BCBA who is teaching vocational skills to a client named Ryan. He is teaching Ryan how to properly assemble IKEA furniture following the instructions in the manual. Ryan is very efficient at this but he tries to complete them so fast that he makes a lot of errors while doing so. Which DRL procedure would be most appropriate to address Ryan's situation where he is working too fast and making errors on his tasks.

- A. DRO-L
- B. Interval DRL
- C. Full session DRL
- D. **Spaced responding DRL**

23. John's daughter Abby notices that when John is putting on his jacket and getting his bag that he needs his keys before he leaves. Time she comes up to him and hand him his keys. He's so delighted that he gives her a special edible treat that he saves for special occasions. Now every time he gets ready to leave Abby runs to get his keys to hand to him. What is an example of?

- A. Generality
- B. Pragmatism
- C. Phylogeny
- D. **Ontogeny**

24. What behavioral concept is represented when somebody takes TUMS when they are feeling heartburn or acid reflux?

- A. **Negative reinforcement**
- B. Negative punishment
- C. Positive reinforcement
- D. Positive punishment

25. **What type of verbal operant is it when someone asks another individual for personal information?**

- A. Echoic

- B. Mand
- C. Tact
- D. **Intraverbal**

26. Timmy has been in aba programs since he was three years old and is now nine. His new therapist Maggie begins to work with him and immediately starts to use token board with him. She is working on increasing his functional communication. Prior to using the token economy she performed a baseline analysis of this skill and he was correctly responding in 10 out of 20 trials. As soon as she added the token economy, she noticed that every single token she gives him he begins, engage in maladaptive behavior and shows decrease in his verbal responding. After she removes the token economy, he immediately stops, engaging in the maladaptive behavior and returns to his baseline level of performance. What did the this token economy act as for Timmy?

- A. A negative reinforcer
- B. A negative punisher
- C. A positive reinforcer
- D. **A positive punisher**

27. Rita is working with Gerald and using a token economy. Due to the fact that Gerald engages in maladaptive behavior in the form of spitting, she applies a response cost where she removes a token every time he spits. According to data he spits five times per hour. Once she begins working with him and applying the response cost and a token for every time he spits she noticed that his spitting went up to an average of 12 times per hour. What is the response cost acting as?

- A. **A negative reinforcer**
- B. A negative punisher
- C. A positive reinforcer
- D. A positive punisher

**28.** Mac is a BCBA® who is teaching Ella how to tie her shoes. Mac teaches Elsa using a specific method with terms such as “bunny ears” for the loops and a task analysis. Elsa finds this very confusing, but can tie her shoes this way to completion. However, she observes another student doing a different way at school, she was able to copy that way and then tie her shoes effectively using a new method. Both methods were effective at tying her shoes to completion. What was Elsa demonstrating?

- A. **Response generalization**
- B. Derived stimulus relation
- C. Maintenance
- D. Stimulus generalization

**29.** What makes an ABAB design a preferred design compared ABA design when showing the correlation with the independent variable and the dependent variable?

- A. It demonstrates causation
- B. It demonstrates a stronger functional relationship
- C. It shows replication
- D. **Both B and C**

**30.** Which of the following is true about an alternating treatment design?

- A. It uses multiple subjects in a staggered format, ruling out external confounding variables
- B. There is a reversal from the treatment condition back to the baseline and then back to the treatment phase?
- C. **It requires a minimum of 2 treatments to compare to one another**
- D. None of the above

**31. Which of the following would you not consider when conducting an initial interview along with the VB-MAPP or the ABLLS assessment tool during an initial assessment to create a treatment plan?**

- A. Potential target behaviors
- B. Potential medical variables
- C. Potential reinforcers
- D. Potential punishers that can be used during treatment**

**32. You begin conducting an initial assessment with a client who has a diagnosis of autism and was referred for ABA services. During the assessment it's brought to your attention during the interview with the family and the client that he expresses that he has attempted and is considering causing self harm to himself and has admitted that he has intentionally engaged in actions that could have been life threatening. He expressed that he wants to feel better, but doesn't know what he can do. As Behavior Analyst specializing in ABA therapy with individuals on the autism spectrum, what would be the best action to take?**

- A. Seek supervision while treating This client from someone who has experience with individuals with suicidal ideations.
- B. Review literature on using behavior analytic interventions to treat depression and decreasing self harm and apply the methods suggested in the article.
- C. Refer him to an appropriate medical professional and terminate services.**
- D. Treat him like any client and treat this behavior as a target behavior and conduct and FBA so you can teach him replacement behavior. You can not discriminate a client because his target behavior is different, he has autism and should receive ABA services as recommended.

**33. When selecting treatment goals you should consider which of the following?**

- A. Whether a behavior will access reinforcement in the natural environment.

- B. Social significance
- C. Social validity
- D. **All of the above**

34. Tyler is a BCBA and is teaching Rick how to tie his shoes using backwards chaining with leaps ahead. Which assessment was MOST likely used when she initially probed making the bed?

- A. Indirect assessment
- B. Functional assessment
- C. Single opportunity probe
- D. **Multiple opportunity probe**

35. Ethan performed a preference assessment with his new client to see what his preferred reinforcers were, however, Ethan did not use any trials during his preference assessment? Which type of preference assessment most likely use?

- A. **Free Operant**
- B. Single stimulus
- C. Multiple stimulus
- D. Paired stimulus

36. **When conducting a functional assessment using a descriptive method, which of the following is most likely to be disproportionately selected?**

- A. Tangible
- B. Sensory

- C. Escape
- D. **Attention**

**37. When conducting a functional analysis in applied behavior analysis, which of the following is considered the control condition?**

- A. Alone
- B. Escape
- C. **Play**
- D. Attention

**38.** Dan is a BCBA and has been asked to assist as a consultant at a local school. He is informed by the teachers that a specific child who is eloping from the classroom is doing this for attention, based on her opinion. However, after an analysis, Dan noticed that the data spanning multiple weeks shows that he only elopes during The specific period when they work on reading. Based on his analysis what is most likely the function

- A. Sensory
- B. Attention
- C. Tangible
- D. **Escape**

**39.** Molly is taught how to do the “more” hand gesture in order to get an edible reinforcer as she is just beginning mand training? Now Molly will go up to her peers when they are eating items that she wants and performs the “more” hand gesture. She also engages in this when her mother is preparing a snack that she desires.

- A. **Stimulus generalization**
- B. Overgeneralization

- C. Stimulus maintenance
- D. Response generalization

**40. Which of the following is not a possible problem to consider when performing a functional analysis?**

- A. It can trigger maladaptive behaviors
- B. It can be time consuming
- C. It can make problem behavior worse
- D. It is ineffective at identifying the function of the behavior being assessed**

**41. What are the four most common conditions that are assessed when conducting a functional analysis?**

- A. Play, escape, attention, alone**
- B. Play, tangible, attention, alone
- C. Play, escape, attention, tangible
- D. Play, escape, tangible, alone

**42.** Matthew is a BCBA and he has been asked to conduct a functional behavior analysis on a 13 year old client. The client exhibits severe self injuries behavior In the form of striking himself in the face with a closed fist as well, biting his arms. This behavior has resulted in him having to be brought to the emergency room on numerous occasions. For Matthew to address this issue, he must have a thorough understanding of the function of the behavior. What type of function analysis would be most appropriate for this situation?

- A. Latency based FA
- B. Brief FA
- C. A trial-based FA
- D. **Analysis of precursors**

**43.** Peter is a BCBA® working with Mary Jane. Mary Jane frequently elopes from his residence and lives in a highly populated area, making the situation be very dangerous. Peter wants to conduct a functional analysis but is limited on time spent with Mary Jane. Peter speaks to Mary Jane's RBT®s and after reviewing their descriptive feedback and hypothesized function of the behavior. Peter conducts an FA using only escape and play condition due to the time constrains on direct involvement with Mary Jane, he and concludes the behavior is reinforced by escape. What type of FA did conduct?

- A. Brief FA
- B. Trial based FA
- C. Latency based FA
- D. synthesized FA

**44. Which on of the FA's analyzes the amount of time between the start of a condition and when the individual engages in the behavior?**

- A. Trial Based FA
- B. Brief FA
- C. Analysis of the precursors
- D. Latency FA

**45. Which type of assessment is used to obtain general information**

**In order to determine if ABA services are appropriate for the particular client.**

- A. Direct assessment

- B. Indirect assessment
- C. Ecological assessment
- D. **Preliminary assessment**

46. Penny is a BCBA and feels that it would be best to perform a functional analysis on her client in order to better understand the function of the clients aggressive behavior. Prior to performing the functional analysis, Penny obtains consent to perform the functional analysis. However, after the session, the client's mother notices that her son has bruises on his arm. The BCBA informs her that it's from the functional analysis where the behavior was provoked. The clients mother is so angry, she immediately takes her child out of ABA therapy and contact the agency with a complaint. What did the BCBA do that was incorrect?

- A. She selected the wrong type of FA
- B. She shouldn't have conducted an FA if it would cause bruising.
- C. She did not account for behaviors escalating during an FA.
- D. **She failed to obtain informed consent.**

47. Nicole is in the supermarket with her son Louis. Nicole calls his name responds five seconds after his name is called with "What do you want mom?". Louis then becomes distracted and starts playing with the fruit and juggling the oranges for three minutes and then he goes over to his mom and starts following her around the store. What is the latency from the time Louis's mom called his name till he verbally responded?

- A. **1 second**
- B. 3 mins and 1 second
- C. 30 seconds
- D. 3 minutes

**48. Space responding DRL manipulates which of the following?**

- A. **IRT**
- B. Latency
- C. Duration
- D. Rate

**49. When trying to assess how many targets a client has mastered in a single authorization, which graph would be best at visually depicting this?**

- A. Trials to criterion
- B. **Cumulative record**
- C. Rate
- D. Celeration

**50. Which is true about whole interval recording?**

- A. It tends to underestimate behavior
- B. If the behavior occurs for 99% out of the interval, it still counts as a non-occurrence
- C. The behavior has to occur for the entire length of the interval count as an occurrence
- D. **All of the above**

**51. In order to set an appropriate time interval for reinforcement for a NCR which time time interval is needed to create an appropriate time for reinforcement**

- A. Duration
- B. Latency
- C. Celeration
- D. **IRT**

52. Harry is in a challenge at his office to see who can lose the most weight. Anyone who wins over 20 pounds Gets \$300 and the winner gets \$500. Harry is very confident that he is the winner as his scale at home says that he lost 26 pounds first thing in the morning on an empty stomach. However, the scale the gym says he lost 24 pounds. Frustrated, Tom goes to the doctors office to find out that he only lost 19 pounds.

What's wrong with the data related Harry's weight loss?

- A. It is not valid
- B. It is accurate but not reliable
- C. It is not accurate
- D. **It is not accurate or reliable**

53. Which of the following is NOT true?

- A. Data can be valid but not accurate
- B. Data can be accurate but not reliable
- C. Data can be valid but not reliable
- D. **Data can be accurate but not valid**

54. Which of the following is not true about data?

- A. **Using data is the best practice but is not addressed by the ethics code.**
- B. Behavior analysts are ethically required to use data to justify all treatment decisions
- C. Behavior analysts must utilize data during all behavior reduction procedures and all skill building procedures
- D. Ethically, data must be displayed in a way that is easily understood

**55. In order to be in compliance with the BACB, in order for behavior analysts to post photos of their clients they must do which of the following?**

- A. Behavior analysts can never post photos of their clients on their social media or websites.
- B. Behavior analysts can always post photos of their clients on their social media or websites.
- C. Behavior analysts can post photos of their clients on their social media or websites if they obtained informed consent
- D. **Behavior analysts can post photos of their clients on their social media or websites if they obtained informed consent and post a disclaimer indicating that informed consent was obtained**

**56. Which of the following measurements for behavior would be most appropriate for an individual, where the treatment plan is aimed at increasing time spent sitting while in their classroom setting?**

- A. **Whole interval**
- B. Rate
- C. Partial interval
- D. Momentary time sampling

**57. If we were using a running race as a metaphor and we state that the Runner with the the lowest in latency usually wins. Which of the following would represent latency?**

- A. **The person who starts running the soonest after the race starts.**
- B. The person who runs for the shortest amount of time
- C. The person with the least amount of time between steps.
- D. The person who runs the fastest.

58. When Adam is working on assignments and gets frustrated, he will often tear up the assignment that he is struggling with? The therapist working with him is recording how many pages he tears up in one given hour. Which of the following would best describe what she is recording when counting each assignment?

- A. **Permanent product**
- B. Celeration
- C. Rate
- D. Frequency

59. When working on a shaping procedure and focusing on increasing the volume of a clients speech. Which of the following would be the best way to record improvements in this domain?

- A. Pitch
- B. Prosody
- C. **Magnitude**
- D. Fluency

60. When working with a particular client, you are attempting to record the behavior of sitting while in the classroom. Your data varies drastically as one day he was taken out of the class early to attend speech therapy so you recorded three minutes. A second time you recorded the whole day and had a time of 24-minutes. A third time you attempted to record the data, there was an emergency evacuation, and all students were taken out and you only recorded 45 seconds of seated behavior. What would be a criticism of this data?

- A. It is not accurate
- B. It is not reliable
- C. **It is not valid**

D. Jennifer is using an incorrect measurement system

**61. You are a BCBA who is presenting a new behavior intervention plan for a student at a particular school that you act as a consultant for. When describing the particular students behavior you are presenting on how you over the course of the year his aggressive behavior has been relatively consistent but changed from slapping and punching to kicking and hair pulling. What would you say changed in regards to his aggressive behavior.**

A. Magnitude

B. Latency

**C. Topography**

D. Function

**62. Which of the following best describes the definition of inter response time.**

A) The time from one target behavior to next target behavior

B) The time from the mean duration of one behavior to the mean duration of the next behavior

**C) The time from the ending of one behavior to the beginning of the next behavior.**

D) All of the above

**63.** Titus is working with his clients compliance. Every time his client engages in non-compliance a RIRD strategy is employed, all time where he is working and complying, he is considered “on-task”. The start of each session begins with the start of a timer which starts when they are both sitting at the table where they work on lessons. On Monday he worked for 6-minutes before an RIRD performance had to be performed. On Tuesday they he made it 4-minutes before the RIRD was performed. On

Wednesday, he made it 8-minutes. The duration for the off-task behavior was 3-minutes. What is the average latency of the clients on task behavior.

**A. 6 minutes**

- B. 7 minutes
- C. Not enough information.
- D. 9 minutes

**64.** Yusef is a BCBA who is utilizing a behavior plan that encompasses token economy, functional communication training and a DRO procedure. After in servicing the program and observing the therapists applying the different strategies, Yusef contemplates if the multiple strategies simultaneously are necessary. What would this be considered?

- A. A parametric analysis
- B. A nonparametric analysis
- C. **A component analysis**
- D. A comparative analysis

**65.** All of the following are behavioral dimensions, except for which of the following?

- A. IRT
- B. Frequency
- C. Rate
- D. **Percentage**

**66.** Which one of the following measures represents the behavior dimension of repeatability?

- A. Duration
- B. **Rate**
- C. Latency
- D. Percent

**67. Which measure represents temporal locust?**

- A. IRT
- B. Latency
- C. None of the above
- D. **Both A and B**

**68. Temporal extent is characterized in the behavioral measurement?**

- A. Rate
- B. IRT
- C. Frequency
- D. **Duration**

**69. During a free operant preference assessment. What measure is MOST likely to be used?**

- A. **Duration**
- B. IRT
- C. Frequency
- D. Rate

**70. If a BCBA is attempting to analyze his clients performance when he has given his preferred reinforcer, which is an iPad for 5 minutes or**

**10 minutes, this is an example of**

- A. Parametric
- B. Non parametric
- C. Comparative
- D. **Component analysis**

**71. When utilizing a chaining procedure, which of the following would you be least likely to use after doing a single opportunity probe?**

- A) Forward chaining
- B) Total task presentation
- C) Backwards chaining
- D) Backwards chaining with leaps ahead**

**72. If you are trying to teach a new client how to do a puzzle, which of the following chain procedures would you be least likely to use?**

- A) Backward chaining
- B) Total task presentation
- C) Forward chaining**
- D) Backwards chaining with leaps ahead

**73. When working with an adolescent who is performing at grade level with no known disabilities, which of the following chaining procedures would be most appropriate?**

- A. A)Forward chaining
- B. B)Total task presentation**
- C. C)Backwards chaining
- D. D)Backwards chaining with leaps ahead

**74. Incidental teaching falls on which of the following categories?**

- A) Discrete-trial training
- B) Naturalistic teaching arrangements**

- C) Discrimination training
- D) Free-Operant training

**75. When teaching skills that have a clear discriminative stimulus as well a clear and definitive response, that can be objectively considered correct or incorrect, which of the following strategies would be most appropriate?**

- A) Discrete-trial training**
- B) Naturalistic teaching arrangements
- C) Discrimination training
- D) Free-Operant training

**76. When working on receptive language with a client, you are prompting them to select a specific type of household items out of a field of 20. Which of the following would best characterize the training you are performing?**

- A) Discrete-trial training
- B) Naturalistic teaching arrangements
- C) Discrimination training**
- D) Free-Operant training

**77. Which compound schedule of reinforcement is associated with the matching law?**

- A. Tandem
- B. Multiple
- C. Intermittent
- D. Concurrent**

**78. Which compound schedule of reinforcement is associated with behavior contrast?**

- A. Tandem
- B. Mixed
- C. Intermittent
- D. **Multiple**

**79.** Ronny is a BCBA working on a case where there are three therapists. As a result, he has a very descriptive behavior plan where reinforcement is to be delivered after every third correct response.

Which reinforcement schedule is he using

- A. **All of the Above**
- B. None of the Above
- C. Fixed interval
- D. FI3

**80.** Mickey has a new client and he is building up his tolerance for “on task” behavior and skill acquisition lessons. As a result, Mickey gives him a break about every three minutes.

- A. Variable interval
- B. Fixed time
- C. Fixed Interval
- D. **Variable time**

**81. Which reinforcement schedule create a behavioral pattern that has a scalloped response and unsteady response patterns.**

- A. Fixed ratio

- B. Variable interval
- C. **Fixed Interval**
- D. Variable ratio

82. Ron is being trained on ADL skills and is working on putting the drinking glasses with identical glasses as well as the same for the dishes and the silverware. What did Job demonstrate?

- A. Transitivity
- B. **Reflexivity**
- C. Symmetry
- D. Stimulus Equivalence

83. Which of the following is a form of reinforcement that is established by reinforcing a specific amount of time that is just below the IRT of their target behavior?

- A. Establishing operations
- B. Abolishing operations
- C. **NCR**
- D. FCT

84. You should NEVER use extinction with?

- A. Attention maintained behaviors
- B. Escape maintained behaviors
- C. **Automatically maintained behaviors**
- D. Socially maintained behaviors

85. Monty was very interested in Fish, when he was on vacation in Hawaii, he's so fish that he has never seen before. The fish was 3 feet long, blue, red and yellow, and had a pointy nose like a sword. When his teacher asked him how he knew it was a fish, he said "because it swam in the water, it had gills and had a fishes tail. What did Monty use to come to the conclusion that the animal he saw was a fish?

- A. **A relational frame**
- B. Response generalization
- C. Stimulus equivalence
- D. Maintenance

86. Justin is a BCBA and working with a new family where the child he is assigned to will exhibit tantrum behavior when she is in preferred store if she cannot immediately go to the toy section. Justin worked with the family on using a "first-then" contingency board to show the client that she first had to comply with the parents, then she would go to the toy section. Initially she began to tantrum louder and more intense than usual. This persisted for three sessions at the store and then she began complying with the program and first followed the directions and then she went to see the toys. Was this client exhibiting when this intervention was first employed?

- A. **Extinction burst**
- B. Resurgence
- C. Spontaneous recovery
- D. Resistance to extinction

87. Oswald was taught his dad's name is Luke. Later in the day when someone asked "Who's Luke?" Oswald said, "That's my dad!" without ever being taught to answer this directly. What did Oswald demonstrate?

- A. Reflexivity
- B. Transitivity
- C. Stimulus generalization
- D. **Symmetry**

88. What type reinforcement does stimming usually provide?

- A. Automatic positive reinforcement
- B. Sensory input
- C. Social escape
- D. **Both A & B**
- E) All of the Above

89. Chloe missed two weeks of school due to having the Covid virus. When she returned, his teacher told her that she had to complete all of the missing work while continuing to keep up with all of the work in her advanced classes. Chole was very overwhelmed and did not feel that this was possible and the make up work would interfere with her current studies. As a result, she kindly spoke to his teacher and expressed her concern. His teacher agreed with her and told her that she did not have to complete the work that he missed due to her medical leave. Chloe verbally consulting with her teacher will most likely result in her advocating for herself more in the future. What is an example of?

- A. Automatic positive reinforcement
- B. **Social negative reinforcement**
- C. Automatic negative reinforcement
- D. Social positive reinforcement

90. Jennifer is teaching Khalil to write his first and last name. She teaches him to write his name with a marker, a pen and a pencil. She also teaches him to write it on the bottom of a letter, as he is taught to write it in the correct section on his homework assignments. What type of generalization is this?

A) Response generalization

**B) Stimulus generalization**

C) Stimulus equivalence

D) Generalization across materials

91. Liam is now teaching Henry to state “Hello my name is Henry Smith,” as well “Hello, I’m Henry, how are you?,” along with “Hey I’m Henry, what’s your name?” His goal is for him to be able to have multiple greetings.

A. Stimulus generalization

B. Stimulus equivalence

C. Generalization across materials

**D. Response generalization**

92. Oliver is a BCBA who is working with Eli. When Eli is frustrated, he will throw all of the items off of his desk. On one particular occasion, Eli threw all the items off of his desk at the end of the session. Oliver had to leave as he had to get to another client and informed his mother that she should have him clean up his items when he has de-escalated. Eli’s mom did not follow the instructions because she was tired and picked them up for him. Since that day, Eli has increased the frequency of his throwing as well. He has become more resistant to cleaning up the area. What is the most likely explanation for Eli engaging in this behavior?

**A. It was reinforced**

B. It was punished

- C. It was extinguished
- D. It was satiated

93. Molly pulled up to a corner on her block as she reached the corner she stopped the car as she noticed a stop sign. However, there was also a woman selling ices in various flavors to customers, a big cherry blossom tree and a group of teenagers on the corner, seemingly laughing and having a good time. What did the stop sign act as?

- A. The MO
- B. The AO
- C. The prompt
- D. **The SD**

94. Jack is working with his daughter Sally and trying to enhance her vocal language. Her favorite snack is apples. Jason will prompt Sophia with the apples available and state “apple.” When Sally repeats the word “apple”, Jason will give Sophia a piece of the apple. After working with her for a few days, he begins to fade out his verbal prompt and just presents the item and Sophia will say “apple” and then Jason will give Sophia the “apple” pieces. Now he will no longer give her a verbal prompt and simply presents the apple. Which of the following is this an example of?

- A. A manding procedure
- B. discrimination training
- C. **Echoic to mand procedure**
- D. A shaping procedure

95. **The therapist is working with a client and following an extinction protocol. Therapist is doing an excellent job following the BCBA instructions and only reinforced the behavior they are putting on extinction 2 out of the 20 times the target behavior was exhibited.**

A) Extinction V2/20 schedule

B) Extinction shaping

C )Failed extinction

**D) Intermittent reinforcement**

96. Jimmy is an executive for company and lives in a very large mansion. When guests come over the house, one of them comment on his house and how beautiful it is. She says “Jimmy is very intelligent and that is why he is so wealthy”. Numerous other guests show up to the house and enjoy his beautiful pool and backyard. Now another guest asks one of the people who commented on Jimmy’s opulence earlier and they stated “Jimmy is very wealthy because he is very intelligent.” What is this an example of?

A) circular reasoning

B) Symmetry

C )mentalism

**D )all of the above**

97. A bunch of coworkers go out for dinner to celebrate one of their birthdays. Ellie doesnt drink alcohol because she is expecting a baby in five months. While they are waiting for their table, Ellie notices that they have a very expensive liquor selection and states “Wow they have Johnny Walker Blue” when she see’s it behind the counter. Which verbal operant is this?

A. Manding w/o success

B. Intraverbal in the form of initiating conversation

C. Mand

**D. Tact**

98. Jane was given a 2-year sentence to prison because she was aggressive and assaulted others on three separate occasions. Following her prison sentence, Jane violated her parole because she was aggressive and assaulted other people on seven different occasions since she was released. Which of the following would best describe what prison was for Jane?

- A. **Positive reinforcement**
- B. Positive punishment
- C. Negative punishment
- D. Negative reinforcement

99. **Theoretically, the effect of a high probability request sequence is a/an:**

- A) A an antecedent reinforcer
- B) Punishment procedure
- C) Establishing operation
- D) Abolishing operation

100. **The CEO of a company tries to improve attendance. The CEO plans to use an independent group contingency to reward for their workers in each department with a \$500 gift certificate to their favorite place for lunch if they reach 98% attendance during the first fiscal quarter AND an interdependent group contingency that will reward all of the employees with a catered lunch if the entire staff hits 95%. How should data be displayed?**

- A. **Individual staff data privately daily. Group data publicly weekly.**
- B. Individual staff data publicly daily. Group data publicly weekly.
- C. Individual staff data privately daily and group data privately daily .
- D. Individual staff data and group data privately weekly.

\*\*\*) Lenny is a BCBA who is supervising a new therapist on a case. The therapist is trying very hard to follow the behavior plan and treatment plan exactly how it is written. However, when Lenny is observing

the therapist while the parent is present, he notices that he is not utilizing the token economy correctly, and is not following the reinforcement schedule written in the plan. What is the BEST thing to do?

- A. Correct Lenny immediately during the session so no poor habits are reinforced.
- B. Rewrite the intervention plan as the reinforcement schedule is arbitrary.
- C. Model using tokens for that particular therapist at the next company-wide staff meeting, so everyone can learn from the error the therapist was making.
- D. **Email the therapist when the session is over.**

101. Lisa is currently in a dispute with her friend and next-door neighbor over an incident where she damaged his neighbor's fence? Lisa realizes that she locked herself out of her house and all of the windows are locked. The only spare key that she has is in the possession of her neighbor that she is currently in a dispute with. Due to the fact that Lisa has to get into her house, she calls her neighbor and asks him if he could bring over the spare key. Which of the following represent the situation listed above?

- A. CMO-R
- B. CMO-S
- C. CMO-P
- D. **CMO-T**

**102. Which of the following best represents an interdependent group contingency?**

- A. **If every person on a baseball team gets at least 1 hit, every person will get a day off from practice on Monday.**
- B. An interdependent contingency should be established to improve each team member's performance.
- C. Differential reinforcement should be utilized with an interdependent group contingency to improve overall team productivity.

D. Every person who gets 1hit will get Monday off from practice.

**103. Which is not an unconditioned reinforcer?**

- A. Food
- B. Sleep
- C. Oxygen
- D. **Money**

**104. Which is NOT a responsibility of a supervisor to a trainee?**

- A. Providing supervision only within their areas of defined competence.
- B. Providing documented, timely feedback regarding the trainee's performance on an ongoing basis.
- C. **Always being available to take on new trainees.**
- D. Being fluent in, current in, and compliant with all BACB requirements relating to fieldwork.

**105. What one of the following is not a potential risk of poor supervision?**

- A. Modeling bad supervision
- B. Unethical outcomes
- C. Poor treatment results
- D. **None of the above**

**106. What type of analysis would you use to determine the effects of a token economy on skill acquisition, by comparing the skill acquisition rate with the token economy and then compare it to the skill acquisition rate without the token economy?**

- A. Parametric

- B. **Non parametric**
- C. Comparative
- D. Component analysis

**107.** Timmy is a BCBA who is supervising Jerry. Tim modeled how to properly implement a NCR procedure to Jerry? Jerry, then demonstrated that he knew how to collect the prerequisite data and then implement the

NCR procedure perfectly. Two weeks later, Timmy observed Jerry and he was implementing it perfectly of his data was collected exactly how he was instructed. What should Timmy do next?

- A. Redo BST
- B. Change the intervention so Jerrick can learn how to carry out a new procedure.
- C. Formally assess Jerrick on using a NCR
- D. **Provide reinforcement to Jerrick and continue to support him.**

**108.** The supervising BCBA has two different RBT's working with a client. The BCBA has two behavioral strategies in mind to implement on this particular client. Which analysis would be most appropriate for this situation?

- A. **Comparative**
- B. Component
- C. Parametric
- D. Nonparametric

**109.** There is currently a contest going on at the office where the first person to lose 10 pounds wins. They weigh in each morning at the beginning of work and record it. Which of the following would be the best recording method for this?

- A. **Trials to criterion**
- B. Frequency
- C. Rate
- D. Percent correct

**110. What is not considered a behavior**

- A. Laughing
- B. Thinking
- C. Deciding
- D. jumping

111. Jessie is starting a new case as a BCBA on her first day she in services all the therapists on the different data collection method she will be using. After one observation and reviewing ABC data from one staff she decides that this child most likely has a comorbid diagnosis of intermittent explosive disorder and implements a DRI procedure, along with concurrent reinforcement procedures. Which of the following philosophical assumptions did Jessie violate?

- A. **Parsimony**
- B. Technological
- C. Empiricism
- D. Effective

112. Jones grew up in the Bronx, New York, specifically in the Arthur

Avenue area, which is famous for its bakeries. Now that he has grown up, he no longer lives there, but every time he sees the exit sign with the name “Arthur Avenue” he becomes hungry. Which one of the following is this an example of?

- A. **CMO-S**
- B. CMO-P
- C. CMO-T
- D. CMO-R

**113.** Michelle is a BCBA, she is trying to expand her current practice and incorporate her passion for physical fitness, but she has no formal training in the area physical fitness? Michelle has decided to advertise herself as a BCBA who can help individuals get physically fit as well. A behavior analytic fitness program due to her being a BCBA and a lifelong fitness enthusiast. What is Michelle doing that is incorrect and not in compliance with the BACB?

- A. **Michelle is practicing outside of his scope of competence**
- B. physical is not behavior-analytic in nature
- C. There is no issue.
- D. Behavior analysts are not allowed to be personal trainers due to liability of injury

**114.** You are BCBA supervising a case, and one of your RBT’s decides to go to the dentist with the family and provide advice to the caretakers at the dental office to better assist the client. You were never informed that she was going to visit the dentist, nor did you help develop a plan and ensure it was in your scope of practice. What action should you take?

- A. Formally write her up and hold a meeting with another BCBA® present.

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- B. Reprimand her immediately
- C. **Review the roles of an RBT® and your company's policies at your next supervision meeting.**
- D. Ignore it, just this once.

115. According to the BACB what are the requirements for supervising fieldwork?

- A. Being a BCBA® for one year and an 8 hour supervision training.
- B. Being a BCBA® or BCaBA for one year, ongoing CEUs in supervision and an 8 hour supervision training.
- C. Being a BCBA® for one year and ongoing CEUs in supervision
- D. **Being a BCBA® for one year, ongoing CEUs in supervision and an 8 hour supervision training**

115. Which form of an analysis should you apply? If the individual you are assessing will destroy any item you put in front of him during a preference assessment?

- A. Comparative analysis
- B. Component analysis
- C. Parametric analysis
- D. **Nonparametric analysis**

116. Your child is currently receiving ABA therapy and working on their verbal operants. As you are getting ready to take your child to school, they make this statement, I think it's snowing outside. What is this an example of?

- A. Intraverbal
- B. Mand
- C. Tact

D. **Autoclitic**

117. You are a board-certified behavior analyst who is working with a client that you have been servicing for over three years.

Unfortunately, this client has experienced a death in his family and is grieving the loss of his loved one. Due to your experience with this individual, you decide to apply different, cognitive behavioral therapy based bereavement strategies in the form of talk therapy with the best intentions. Which of the dimensions of behavior analysis is your strategy not aligned with?

A. **Conceptually systematic**

- B. Technical
- C. Generality
- D. Pragmatic

118. You are currently working on a case with the same to RBT for two years. Mary is one of the RBT's and one of your best therapists. You noticed that she has been showing up late to work and although she is taking data and completing her session notes, she is not performing in a manner consistent with her past performance. What is the best way to address this situation?

- A. Ask her to grab a coffee after work to discuss if something is going on in her personal life affecting her work performance.
- B. Ask the other RBT®s on your cases if they know what's wrong
- C. with her.
- D. Write her up. It's affecting her students negatively and they are your number one priority.
- E. **Call an informal meeting. Praise her for her consistent reliable work. Admit you have noticed a change lately and ask if there are any accommodations she may need to make things easier.**

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119. You are a BCBA who already has a caseload of eight clients? You do not feel that you can take any more clients and maintain a high quality of care and good communication with staff. However, the agency you are working for asks you to do them a favor and take on one additional family for 4 hours a week as they have no other BCBA to take the family. You would benefit from the additional finances you would receive from taking the case and the agency needs a BCBA in order for this family to receive services. What should you do?

- A) Take the case and delegate 3 hours of work to her RBT®s.
- B) Take the case but request that the agency finds another BCBA® within 60 days. Document her request in writing.
- C) Decline the case.**
- D) Take the case and make it work. It's only 4 hours and you can use the additional money.

120. Matilda is a BCBA® who is working with a client who also sees an occupational therapist. The OT suggested a sensory diet, including sitting in a bean bag and using a weighted blanket. The BCBA® does not think this will work but mom insists Matilda give it a chance at the advice of the OT? What should Matilda do?

- A. Refuse to implement the sensory diet. It is outside of your scope of practice.
- B. Provide the parent with research articles that show the method. The occupational therapist is suggesting is not beneficial.
- C. Do what the OT asks and take data in a manner consistent with ABA methodology.
- D. Only implement the strategies after it has been properly modeled and demonstrated by the occupational therapist clinicians and therapists involved. Then collect data on the effectiveness of this strategy and if the data shows any negative trends or effectiveness discontinue the use of this practice.**

## BCBA FINAL MOCK EXAM 2

### Question 1 of 175

You were assigned a 10 year old recently adopted male. The child is engaging in frequent self injury, including eye gouging and head slapping. There are no assessment results on record and no medical records available since birth. The child's guardians are the seeking to address the self injury. What is the first thing you, as the behavior analyst, should do?

- a. Implore the guardians seek a full medical work up.
- b. Begin collecting data regarding the frequency and intensity of the behavior, as well as the antecedent conditions, in order to begin intervention as soon as possible.
- c. Intervene immediately without an assessment of any sort due to the safety concerns.
- d. Set up all conditions to conduct a functional analysis, determine the function, and intervene.

### Question 2 of 175

You are supervising a behavior technician and have asked them to randomly switch between two fixed ratio schedule (FR 3 and FR 9) every 45 minutes. This is an example of what type of compound schedule?

- a. Mixed schedule
- b. Multiple schedule
- c. Concurrent schedule
- d. Chained schedule

### Question 3 of 175

An example of a well appropriately defined supervisee performance expectation is:

- a. Do no harm.

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- b. If the first intervention doesn't work, try others until one does.
- c. Session notes and monthly progress reports should be submitted on the determined due date or before.
- d. Follow the task list.

### Question 4 of 175

When measuring response compliance within 1 minute of a demand, which dimension of behavior is of interest?

- a. Frequency
- b. Intensity
- c. Duration
- d. Interresponse time

### Question 5 of 175

Clients or stakeholders need to approve all of the following except:

- a. Target behaviors
- b. Total number of hours needed for service delivery
- c. Program interventions
- d. Goal objectives

### Question 6 of 175

Choose the best option to promote maintenance of goals: a. Indiscriminable contingencies

- b. Fixed reinforcement schedules
- c. Progressive schedules of reinforcement

d. Delays to reinforcement schedule

Question 7 of 175

Which of the following is not part of a BCBA®'s responsibility to supervisees and trainees?

- a. A BCBA supervising BIG exam candidates must complete all required supervision requirements, such as the 8-hour supervision training - b. A BCBA cannot take on more than 25 billable hours of supervision
- c. A BCBA must retain supervision documentation for at least 7 years - d. A BCBA must address topics related to diversity

Question 8 of 175

Which preference assessment would be best to use with a client who does not exhibit the ability to make choices?

- a. Forced choice
- b. Multiple stimulus
- c. Successive choice
- d. Multiple choice

Question 9 of 175

What should be examined on a line graph when you are interested in how much a target behavior changed following the implementation of a treatment package?

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- a. Level
- b. Trend
- c. Variability
- d. Condition lines

### Question 10 of 175

This is not a way for a BCBA® to maintain professional competence:

- a. Continued education
- b. Professional workshops
- c. Additional coursework
- d. Reading about the history of ABA

### Question 11 of 175

A client has gotten so used to his RBTTM's vocal tone that he only responds correctly to her or to people with similar vocal tones. What method of programming for generalization should be used to ensure correct responding regardless of who is asking?

- a. General case strategy
- b. Multiple exemplar training
- c. Program common stimuli
- d. Training loosely

### Question 12 of 175

Damon exhibits inappropriate attention-seeking behaviors, on average every 7 minutes. To reduce these behaviors, his RBT<sup>®</sup> has been asked to give him non-contingent attention every 6.5 minutes. The plan works and Damon's inappropriate behaviors decrease. What explains the success of the program?

- a. Attention given every 6.5 minutes created an AO for the challenging behavior
- b. Attention given every 6.5 minutes created an EO for the challenging behavior
- c. Attention given every 6.5 minutes acted as negative punishment
- d. Attention given every 6.5 minutes acted as positive punishment

Question 13 of 175

Every time he is asked to run a mile in his gym class, Randy exhibits aggressive behavior toward his peers. At his school, all aggressive behaviors are disciplined with a trip to the principal's office. Which option would best explain the effects of this consequence on Randy's aggressive behavior?

- a. Positive reinforcement
- b. Negative reinforcement
- c. Positive punishment
- d. Negative punishment

Question 14 of 175

Waldo has dandruff. He bought a dandruff shampoo that instructs him to use the shampoo for three days at a time and take three day breaks in between. What kind of study would be best for evaluating the effectiveness of this shampoo and its recommended process?

- a. Parametric analyses
- b. Nonparametric analysis
- c. Comparative analysis
- d. Component analysis

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### Question 15 of 175

What is true about setting ABA program goal objectives?

- a. They should be set prior to program implementation
- b. They should be agreed upon by the client
- c. They should be the standard by which treatment decisions are made
- d. All of the above

### Question 16 of 175

Regina used a multiple baseline design across subjects to test the efficacy of an RiRD procedure to reduce vocal stereotypy with four subjects. Which assumption is correct in regards to her experiment?

- a. This is a group design because there is more than one participant
- b. This is a single-subject design because each subject acts as his own control
- c. This is a group design and will show variability between participants
- d. This is a single-subject design and will therefore not have intrasubject replication

### Question 18 of 175

In this level of scientific understanding, what has been hypothesized is confirmed:

- a. Description
- b. Prediction
- c. Control
- d. Verification

### Question 19 of 175

Discriminative stimulus control is established through the process of:

- a. Differential reinforcement
- b. Discrimination
- c. Differentiation
- d. Stimulus generalization

Question 20 of 175

In a two-hour session, Rita exhibits an average of ten tantrum behaviors, varying between three minutes to seven minutes in duration. The offset is 3- seconds without any evidence of the defined tantrum behaviors. Your treatment plan is meant to eliminate tantrum behaviors. What temporal dimension of behavior should be used to measure Rita's progress or lack thereof?

- a. Interresponse time
- b total duration per session
- c Duration per occurrence
- d Temporal extent

Question 21 of 175

When assessing your supervisees' skills, you should:

- a. Base assessment on the skills described in the 5th Edition Task List - b. Base assessment on the minimum competency requirements for BACB® certification
- c. Base assessment on the skills needed to be an effective behavior analyst
- d. All of the above

Question 22 of 175

Of the following examples, which conditional probability is most precise in predicting the conditions under which a behavior may occur?

- a. -.4

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- b. -.9
- C. 8.5
- d. 85%

### Question 23 of 175

There are many community helpers that we call on when we need help with something. We can call a plumber when a pipe bursts, or a locksmith when we get locked out of our house, or a fireman to help get our cat out of a tree. In behavior analytic terms, what would these professionals be?

- a Stimulus prompts
- b. Discriminative stimuli
- c. Reinforcers
- d. Motivating operations

### Question 24 of 175

Which of the examples below describes rule-governed behavior?

- a. Cleaning your room because your mother said you would be punished if you didn't
- b. Planting tulips in the fall so that they can bloom in spring
- c. Shutting down your Facebook page when your boss walks by your desk –
- d. Using Google to look up a grammar rule

### Question 25 of 175

This branch of behavior analysis does not include private events in its analysis of behavior:

- a. Experimental analysis of behavior

- b. Behaviorism
- c. Radical behaviorism
- d. Classical conditioning

Question 26 of 175

What is true about percentage data?

- a. It depicts the number of times a behavior occurs
- b. It looks at changes in rate over time
- c. It is used when observation time is constant
- d. It is the most widely used measurement in ABA

Question 27 of 175

Fran is a great chef specializing in cooking chicken, which she is able to do on the range, in an air fryer, on a BBQ grill and in the oven. The outcome is delicious chicken, no matter which way she decides to prepare it. What best defines this collection of methods that Fran uses to prepare chicken?

- a. Response class
- b. Stimulus class
- c. Concept
- d. Repertoire class

Question 28 of 175

Gina is a BCBA® responsible for training the staff at her agency. During her training on differential reinforcement she had a precise description of differential reinforcement procedures, provided a brief written description of the skills that she would be teaching, modeled the necessary skills for her trainees,

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and had her trainees role play running differential reinforcement programs. What else does Gina need to do to ensure her trainees have competence in implementing differential reinforcement procedures?

- a. Observe the trainees and provide feedback
- b. Repeat her training methods and gradually transition to the natural setting with clients
- c. Observe the trainees, provide feedback, repeat trainings, and gradually transition to the natural setting with clients
- d. Test the trainees on their skill acquisition and provide corrective feedback

Question 29 of 175

Which of the following procedures is used to decrease challenging behavior?

- a. Negative reinforcement
- b. Non-contingent reinforcement
- c. Positive reinforcement
- d. Premack Principle

Question 30 of 175

You have hired a marketing team to promote your ABA agency. One of their social media ads states that your company has been rated as the top ABA agency in the state by a local pediatric neurologist who refers clients to your agency. The doctor did, in fact, say that, but given that this review was not based on any data, what should you do?

- a. Contact the ad agency and ask them to remove the ad and refrain from such ads in the future
- b. Document the conversation and all efforts to correct the ad
- c. Speak to the pediatric neurologist to ensure that they avoid making such statements when referring clients to your agency

- d. All of the above

Question 31 of 175

Assessment results should not be used to:

- a. Identify punishers and reinforcers
- b. Identify if there is a need for medical intervention
- c. Identify which independent variables should be avoided
- d. Identify antecedents that evoke challenging behaviors

Question 32 of 175

During a nonverbal imitation program, Ms. Lopez taught her client to imitate five specific physical behaviors (making a fist, tapping the table, clapping hands, touching head, and rolling a car). Shortly after, Ms. Lopez observed the client imitating her when she put her hands on her hips, a response that was not previously taught. How would you define this type of imitation?

- a. Generalized imitation
- b. Overgeneralized imitation
- c. Controlled relation
- d. Planned imitation

Question 33 of 175

Maxine's son refuses to eat his meals. The identified function of this refusal is escape. Maxine would like her ABA team to implement an extinction procedure. The case supervisor has many warnings about using extinction with this type of behavior because it will require:

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- a. Ignoring the escape behaviors for a period of time
- b. Providing regular breaks from eating and possibly causing malnutrition
- c. Force-feeding him
- d. Using primary reinforcers, which isn't recommended

Question 34 of 175

Which schedule of reinforcement is strongest if your goal is to maintain a mastered behavior?

- a. VI 1
- b. VR 6
- c. FI 5
- d. VR 17

Question 35 of 175

In a functional analysis:

- a. A client's natural environmental variables are manipulated
- b. We can yield a hypothetical function of behavior
- c. A multiple treatment design is used to visually display the results
- d. Environmental manipulations are only conducted in laboratory settings

Question 36 of 175

What is true about behavior?

- a. It is what living organisms do
- b. It involves people's thoughts and feelings
- c. It affects the environment
- d. All of the above

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### Question 37 of 175

You have been asked to create a behavior intervention program for a young man who resides in a group home. The presenting behavior is elopement and the administrators are worried about his safety. What should you do first?

- a. Start a behavior assessment
- b. Find out what procedures have worked in the past
- c. Assess staff training programs
- d. Teach the client the replacement behavior of asking for a break

### Question 38 of 175

In a receptive labeling program, a client struggles with identifying the correct stimuli when asked, "What do you eat with?" This is a problem with which type of stimulus class?

- a. Formal
- b. Functional
- c. Temporal
- d. Arbitrary

### Question 39 of 175

When interpreting data with extreme outliers, it is best to use a:

- a. Mean level line
- b. Median level line
- c. Mean trend line
- d. Median trend line

Question 40 of 175

What is true about outcome-based feedback?

- a. Feedback is based on direct measurement
- b. Feedback is difficult to deliver
- c. Feedback is based on observable changes
- d. Feedback is based on staff performance

Question 41 of 175

At the start of tact training, you should:

- a. Make sure a verbal SD is present for the targeted item
- b. Use pictures of generic household items
- c. Try to transfer control from a non-verbal SD to the MO
- d. Ensure that there is an MO present for the targeted item

Question 42 of 175

Which of the following procedures changes or eliminates the SD?

- a. Non-contingent reinforcement
- b. Functional communication training
- c. Stimulus prompting
- d. Naturalistic teaching

Question 43 of 175

Which of the following is an example of positive punishment?

- a. Jacob's mother tells him that, if he ever gets married, he will not inherit her wealth and Jacob never marries
- b. After Jennifer's husband leaves her, she never gets married again

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- c. Jason never gets married because he fears alimony payments if the marriage doesn't work out
- d. After a difficult divorce, Simona never gets married again

Question 44 of 175

Which of the following is the least socially significant behavior goal?

- a. Teaching a teenager to admit that he often tells lies
- b. Teaching a client who must ride the bus to work how to ride the bus independently
- c. Toilet-training a client so that they can participate in general education activities with same-age peers
- d. Teaching a client to say hello to his peers instead of pushing them

Question 45 of 175

Michael attends a symposium in which a researcher describes an extremely successful procedure to decrease his client's self-injurious behaviors, maintained by automatic reinforcement. Michael, who specializes in SIB, decides to replicate this procedure with one of his clients. What type of replication does this describe?

- a. Indirect replication
- b. Direct replication
- c. Systematic replication
- d. Intersubject systematic replication

Question 46 of 175

What is the best way to assess your own effectiveness as a supervisor?

- a. Using a self-evaluation form
- b. Using a self-monitoring form
- c. Video observation by another BCBA®
- d. Performance Diagnostic Checklist

Question 47 of 175

Which of the following is not an ABA concept typically utilized in contingency contracts?

- a. Stimulus prompting
- b. Rule-governance
- c. Permanent product
- d. Response prompting

Question 48 of 175

A direct assessment shows that Lucas elopes from his home because the behavior results in being chased by his family members, which Lucas seems to enjoy as if it is a game of chase. Fortunately, the family lives in a gated cul-de-sac, so there is no danger in him running out of the home. If you were to suggest an extinction procedure to eliminate these escapes, what maintaining consequence would you ask Lucas' family to withhold?

- a. Positive reinforcement
- b. Negative reinforcement
- c. Escape/avoidance
- d. Access to tangibles

Question 49 of 175

What is not true about establishing alternative behaviors to replace challenging behaviors?

- a. Program goals should include replacement behavior(s) for challenging behaviors
- b. Behaviors that are being decreased should be replaced with a functional behavior that may or may not be functionally equivalent
- c. Behaviors that are being decreased should only be replaced with a functional behavior serving the same function
- d. Behaviors that are being decreased should be replaced with an alternative to the problem behavior

Question 50 of 175

Your direct observation data shows that your supervisee is struggling to meet his supervision goals. When you provide feedback, he shares that he does much better

with his clients when you are not there. What can you do to help offset these reactivity effects?

- a. Monitor his sessions less frequently
- b. Provide a warning prior to your visit
- c. Have a more predictable formal schedule

## THE BCBA EXAM STUDY GUIDE

- d. Have a less predictable formal schedule

Question 51 of 175

Which of the following is true about the variations of ABC recording?

- a. In ABC narrative recording, data are collected only when behaviors of interest are observed
- b. In ABC continuous recording, data are collected only when behaviors of interest are observed
- c. ABC continuous recording is less time-consuming than ABC narrative recording
- d. ABC continuous recording is likely to produce data based on inferred states

Question 52 of 175

To help herself remember the street cleaning days in her neighborhood, Donna placed a post-it note with a reminder on her front door. The note reads, "Don't forget to move your car on Wednesday!" Every Wednesday, when Donna sees the note, she moves her car. The post-it note acts as a:

- a. Positional cue
- b. Response prompt
- c. Stimulus prompt
- d. Verbal SD

Question 53 of 175

How can the effectiveness of supervision be evaluated?

- a. Client outcomes
- b. Supervisee satisfaction
- c. Supervisee performance
- d. All of the above

Question 54 of 175

In which of the following scenarios, should your clinical decisions be data-based?

- a. When choosing to terminate a goal
- b. When choosing to continue a goal
- c. When choosing to revise a goal

- d. All of the above

Question 55 of 175

A teacher measures her students' on-task behavior by recording the number of students whose heads are down in their work at the end of a 1--minute interval. What measurement system is she using?

- a. Momentary time-sampling
- b. Planned activity check
- c. Group-based time-sampling
- d. Interdependent group contingency

Question 56 of 175

At PTB, we tell our students that if you study 15-2- hours per week between now and your BIG exam, you could pass the BIG exam. For the many students who follow this recommendation, what contingency is at play?

- a. Rule-governance
- b. Positive reinforcement
- c. Premack Principle
- d. Contingency dependence

Question 57 of 175

When using a token economy system in a classroom, be sure to:

- a. Do a trial run to make sure the token economy system is effective with your students
- b. Use the same criteria for the whole class to ensure fairness
- c. Use high value tokens, so that the tokens are as reinforcing as the backup reinforcers
- d. Start with high-cost back up reinforcers and gradually lower the cost

Question 58 of 175

What is recommended as an effective way to provide feedback?

- a. Limit how much positive feedback is given so, when it is given, it is special and more meaningful
- b. Feedback should include collaborative goal setting
- c. Feedback should emphasize what the problem is so that what needs to change is clearly defined

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- d. Feedback should address program implementation but not client progress

### Question 59 of 175

Jenna's client exhibits dangerous escape-maintained self-injurious behaviors during meal times. She implements a procedure that teaches him to escape the demand, by simply saying, "all done," or "no thank-you". This works and now, instead of hurting himself, he says, "all done," or "no thank you," and is excused from the table. To increase this alternative behavior, she starts with a thick reinforcement schedule. This leads to the client escaping ALL of his meals. What should she have done differently?

- a. She should have identified a secondary function
- b. She should have chosen an incompatible behavior instead of an alternative behavior
- c. She should have also included an alternative to the problem that was not functionally equivalent
- d. Start with a thin reinforcement schedule to increase the alternative behavior

### Question 60 of 175

You are providing ABA services to a client in her preschool class. During your session, you take out a piece of paper and crayons and place them in front of her on a table. The crayons are in a box that she cannot open by herself. When she points to the crayon box, you ask her what she wants and prompt her to vocally ask for help, and she does! You then provide her with the crayons and praise for using her words. What instructional methodology is demonstrated in this scenario?

- a. Naturalistic teaching
- b. Discrete trial training
- c. Free-operant teaching
- d. Personalized system of instruction

### Question 61 of 175

What best describes positive punishment?

- a. Corrective feedback
- b. Exercise
- c. Electrical shock
- d. None of the above

### Question 62 of 175

What best describes the result of this functional analysis?

- a. Positive reinforcement
- b. Positive and negative reinforcement
- c. Negative reinforcement
- d. Automatic reinforcement

Question 63 of 175

According to the Code, which of the following personal histories could impede our ability to be objective in our work?

- a. Our physical health
- b. Our marital status
- c. Our religious beliefs
- d. All of the above

Question 64 of 175

What is the correct list of steps to ensure that personnel can competently perform specific procedures?

- a. Describe the skill, provide a written description, model the skill, practice the skill, observe and provide feedback, repeat as needed, and transition to the natural setting
- b. Transition gradually from the training setting to the natural setting with clients
- c. Describe the skill, model the skill, provide feedback on the skill, and transition to the natural setting
- d. Provide a written description of the skill, model the skill, practice the skill, observe and provide feedback, and transition to the natural setting

Question 65 of 175

An RBT<sup>®</sup> uses pictures of 25 household items to assess a client's tact repertoire. If a client tacts all 25 images correctly, she reports that the client has a tact repertoire of 25 items. How would you describe this assessment data?

- a. The data is biased
- b. The data is a measurement artifact
- c. The data is not accurate

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- d. The data is unreliable

### Question 65 of 175

An RBT<sup>®</sup> uses pictures of 25 household items to assess a client's tact repertoire. If a client tacts all 25 images correctly, she reports that the client has a tact repertoire of 25 items. How would you describe this assessment data?

- a. The data is biased
- b. The data is a measurement artifact
- c. The data is not accurate
- d. The data is unreliable

### Question 66 of 175

To help her client decrease his self-injurious behaviors, Joan has implemented a behavior intervention plan based on a thorough functional behavior assessment. The plan includes five procedures: differential reinforcement of other behavior, a token economy with response cost, a hi-probability request sequence, time-out, and non-contingent reinforcement. Although this plan seems to have reduced the client's self-injurious behaviors, his parents report that it is very cumbersome and time consuming for them to implement. To ensure that her client's parents stay involved and his behavior maintains at a reduced rate, Joan decides to make the program easier for them to implement by limiting the plan to fewer procedures. What should Joan do to decide how to move forward?

- a. Joan should conduct a parametric analysis to see the differential effects of the independent variables that are being implemented and narrow down to the most effective procedures
- b. Joan should conduct a comparative analysis to determine which of the procedures are most effective and only use those
- c. Joan should conduct a changing criterion design to determine which of the procedures are most effective and narrow down to the most effective procedures
- d. Joan should conduct a component analysis to assess which combinations of her program are effective and not effective at reducing the self-injurious

behaviors and narrow down to the effective combinations

### Question 67 of 175

Which verbal behavior is the best example of a mand?

- a. Selena says, "Give me that"
- b. Justin is watching a television show and says, "I need a tan"
- c. Taylor is unemployed and says, "Do you have any job openings?"
- d. Cardi sees cookies and says, "Cookies"

Question 68 of 175

Marco has developed a bad habit of watching too many hours of TikTok videos. He has wasted so much time that he has fallen way behind in his work. He decides to use ABA to decrease this behavior, and forces himself to watch eight straight hours of videos for five consecutive days to get it out of his system. What ABA strategy does this describe?

- a. Noncontingent reinforcement
- b. Habit reversal
- c. Massed practice
- d. Self-directed systematic desensitization

Question 69 of 175

In this type of preference assessment, the assessor compares the client's relative preferences by looking at the client's behavior across sets of 2 stimuli.

- a. Contrived free-operant observation
- b. Naturalistic free-operant observation
- c. Paired stimuli preference assessment
- d. Pre-task choice

Question 70 of 175

This type of measurement is best used when information about a behavior can be derived from counting the occurrence of that behavior in the presence of events that occasion that behavior:

- **a. Percentage**
- b. Count
- c. Rate
- d. Response latency

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### Question 71 of 175

Which statement best reflects the correct use of informed consent?

- a. All instances of obtaining informed consent were documented throughout the client's time with the agency
- b. Informed consent was first obtained immediately after the assessment, right before treatment was implemented
- c. Informed consent was obtained prior to switching the program reinforcer from a trampoline to a swing
- d. Once obtained at the outset of treatment, informed consent does not need to be reobtained

### Question 72 of 175

Which of the following methods are antecedent interventions that are not contingent on behavior?

- a. Manipulating MOs
- b. Teaching alternative behaviors
- c. Decreasing response effort
- d. All of the above

### Question 73 of 175

When teaching a client the social skill of greeting others, we train in such a way that ensures that this behavior generalizes and maintains beyond the treatment setting. Unfortunately, in the real-world, greeting others doesn't always result in a reciprocal response. What method of programming would best prepare the client for this and ensure that the skill generalizes and maintains despite it?

- a. Loosely train
- b. Using indiscriminable contingencies
- c. Mediation
- d. Programming common stimuli

### Question 74 of 175

Following up on the last question, if being greeted back is important for the client, what should you do?

- a. Teach him to utilize a behavior trap to incite a greeting response from others

- b. Teach him to recruit reinforcement from others
- c. Teach him how to contact lag reinforcement
- d. Teach him to set up a contrived mediating stimulus

Question 75 of 175

What is the purpose of assessment?

- a. To determine if services are needed
- b. To determine if referring behaviors are socially significant
- c. To decrease reliance on default technologies
- d. All of the above

Question 76 of 175

What measurement would be best for reporting a client's tolerance to losing games?

- a. Percentage data
- b. Frequency data
- c. Rate data
- d. Response latency

Question 77 of 175

Jennifer, a BCBA® candidate, consistently skips her Friday afternoon session. Which explanation for this pattern in her behavior utilizes a behavior analytic approach?

- a. Jennifer has a new boyfriend who lives out of town and the only train that goes to his town in time for the weekend leaves before her afternoon session
- b. After a long week, Jennifer is burned out by Friday afternoon
- c. Jennifer doesn't feel this client needs services anymore and is frustrated that he continues to receive them
- d. Despite several corrective actions and many promises to have more consistent attendance, Jennifer doesn't present to respect authority

Question 78 of 175

Which of the following is a derived relation?

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- a. Michelle has learned to wait for her turn when playing with her brother - b. Ruth thinks that all people who wear scrubs must be doctors because her pediatrician wears them
- c. Kamala learned that some apples are red and some apples are green - d. Hillary was taught to discriminate between a red and green block

### Question 79 of 175

To prepare her adult client with the needed job skills of a retail sales associate, Sasha set up the client's home with items typically found in a retail store, including a scanner for pricing clothing items, a cash register, clothes that needed folding or hanging, bags to put the clothes in, and so on. By targeting this skill at home in this way, Sasha ensured that what her client learned in training would generalize to an actual store. What method to program for generalization did Sasha utilize with her client?

- a. General case analysis
- b. Program common stimuli
- c. Training loosely
- d. Multiple exemplar training

### Question 80 of 175

A classroom teacher utilizes a contingency in which the entire class can earn a night without homework if three specific students are able to complete that day's classwork. What best describes the contingency in use?

- a. Dependent group contingency
- b. Interdependent group contingency
- c. Independent group contingency
- d. Planned activity check

### Question 81 of 175

Which of the following scenarios best explains why an observer may drift from the original treatment?

- a. They drifted from the specifics of the operational definition
- b. They used discontinuous measurement and produced artifact data
- c. They prefer certain elements of a treatment package over others - d. The wrong dimension of the behavior is being targeted

Question 82 of 175

A researcher wants to systematically and gradually compare the effectiveness of two to three possible independent variables for escape-maintained challenging behaviors. Since showing strong experimental control is very important, they obtained consent for the removal of an effective independent variable. Of the choices below, what would be best for making this comparison?

- a. Reversal design
- b. Multiple baseline design
- c. Multiple treatment design - d. Comparative analysis

Question 83 of 175

You are working with a teenage client who exhibits property destruction in the home and school setting. You are only funded to work with him and his family in the home. Your behavior intervention plan, which includes teaching the parents how to reinforce replacement behaviors, is very successful and decreases the rate of property destruction in the home dramatically. The problem is that, according to his teachers and school staff, the rate of property destruction has substantially increased at school, even though none of the environmental variables in the school setting have changed. What best explains the behavior change at school?

- a. Conditional discrimination
- b. Behavioral contrast
- c. Transient effects
- d. Matching law

Question 84 of 175

A client displays dangerous elopement behavior a mere four times per year. With such an infrequent behavior, we do not yet know the function of this behavior, but we can't intervene appropriately without some information about the function or possible function of the elopement. What should we do?

- a. Conduct an analogue assessment
- b. Conduct a functional analysis
- c. Conduct a brief functional analysis
- d. Conduct an indirect assessment

Question 85 of 175

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We teach Sam that a picture of a shoe equals the written word, "shoe." We also teach Sam that the written word "shoe" equals the spoken word "shoe." Now, thanks to the power of generalization, without any more teaching, Sam derives that the picture of the shoe equals the spoken word "shoe." This best demonstrates:

- a. Symmetry
- b. Reflexivity
- c. Transitivity
- d. Stimulus equivalence

Question 86 of 175

Which of the following should not be considered when prioritizing target behaviors?

- a. Behaviors that have a potential for higher rates of reinforcement
- b. Behaviors that have a higher likelihood of success
- **c. Behaviors that have emerged most recently**
- d. Behaviors that will promote a reduction of negative attention from others

Question 87 of 175

Which of the following terms is defined by the extent to which an experiment shows convincingly that changes in behavior are a function of the IV and not the result of uncontrolled or unknown variables?

- **a. Internal validity**
- b. External validity
- c. Social validity
- d. Procedural fidelity

Question 88 of 175

What type of work duties would reflect the outcomes of effective supervision?

- a. Administrative responsibilities
- b. Graphed data
- c. Timeliness of reporting

- **d. All of the above**

Question 89 of 175

What is true about Darwinian Selectionism?

- **a. It is the basis for radical behaviorism**
- b. It is a two-term contingency with regard to the survival of a species
- c. It is based on phylogeny
- d. It is the basis for classical conditioning

Question 90 of 175

As the supervising BCBA ® at your agency, you implement a program that motivates your staff to complete their progress reports on time.

Staff are reinforced in proportion to their timeliness with gift cards. The card values are highest for reports that are turned in before the due date and lowest for reports that are turned in on the due date. Late reports do not receive any reward. What strategy does this describe?

- a. Manipulating sos
- b. Response prompting
- **c. Differential reinforcement**
- d. Matching law

Question 91 of 175

To help a client choose the correct object in a listener responding program, you lay out pictures of a two household items, a pillow and a chair. You ask the client to touch the chair, followed by gently pointing to the picture of the chair. The client then correctly touches the chair. Which of the following controlled the correct response in this example?

- **a. A stimulus prompt**
- b. A response prom pt
- c. A model prompt

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- d. An SD

Question 92 of 175

What dimension of behavior would you target for a client whose writing causes them to break their pencil and make holes in their paper?

- a. Topography
- **b. Magnitude**
- c. Product measure
- d. Latency

Question 93 of 175

Which of the following is an example of an automatic reinforcement contingency?

- a. An IV that delivers fluids to the body
- **b. Making yourself a martini after work**
- c. A mother breastfeeding her baby
- d. Ordering yourself a drink at the bar

Question 94 of 175

Monica's client, Jack, picks the skin on his fingers. Monica decides to place mittens on Jack's hands to prevent him from picking his fingers and Jack's picking decreases. What procedure is used to decrease the skin-picking behavior in this scenario?

- a. Sensory extinction
- **b. Response blocking**
- c. Negative punishment
- d. Positive punishment

Question 95 of 175

Erin is a sort of ABA influencer. She has fun personal Instagram and YouTube accounts, which she uses to post fun ABA memes and share tips for using ABA with clients. She mostly features her nieces and nephews in her videos, but once in a while she uses footage from her client's sessions for which she always gets consent from stakeholders. She even includes a disclaimer about the consent in her videos. Is this ethical?

- **a. No, the Code states that you may not publish digital content of clients on personal social media accounts**
- b. No, the Code states that you may not publish digital content of clients on any social media accounts
- c. Yes, the Code states that you may publish digital content of clients as long as there is consent
- d. Yes, the Code states that you may publish digital content of clients as long as there is a disclaimer

Question 96 of 175

A group home has several clients that exhibit aggressive behaviors, all of whom have been known to punch a hole in a wall. What would be the best method for measuring the wall punching behavior for any of these clients?

- **a. Measure the behavior directly**
- b. Use product measures to measure the behavior
- c. Interdependent group contingency
- d. Planned activity checks

Question 97 of 175

Of the following options, which best describes a high-probability request sequence?

- a. Reinforce a low probability behavior with a high probability behavior
- **b. Give the client a series of high probability directives, followed by a low probability directive**

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- c. Proactively provide the client with specific amounts of a desirable consequence to decrease an undesirable behavior
- d. Make a specific desirable consequence contingent only on the target behavior and not available at any other time

### Question 98 of 175

When choosing target behaviors for adult clients, consider:

- a. Behaviors that would help with group home living skills
- b. Behaviors that are important to the client's stakeholders
- c. Behaviors that are age-appropriate
- **d. Behaviors that are most likely to contact reinforcement after treatment**

### Question 99 of 175

Which of the following behaviors can be studied using a reversal design?

- a. The effects of a cooking class with Martha Stewart versus with Ina Garten
- b. The effects of Rosetta Stone on foreign language acquisition in comparison to an in-person language class
- **c. The effects of punishment versus differential reinforcement procedures on protest behaviors**
- d. A comparison of modelling versus physical prompting procedures to teach a client to write their name

### Question 100 of 175

All of the following are examples of response generalization except:

- a. Minnie has been taught to take the 5 South to get to her home at Disneyland, but sometimes she takes the 405 FWY to the 55 FWY, or even takes surface streets to get home

- b. Jasmine sometimes picks flowers using her pruning knife, sometimes using scissors, and sometimes just using her hands
- c. Richie's basketball coach teaches him how to shoot the basket with proper form so that he gets the ball into the basket successfully. After the coach left the room, Richie tries to shoot the ball into the basket using the same form the coach taught him, but is unsuccessful at doing so because he is not using the exact form the coach taught him
- **d. There are many different kinds of phones. There are cell phones, pay phones, phones with cords, cordless phones, etc. Most of us know the function of each variation of phone, even if we haven't used all the variations**

Question 101 of 175

What does not belong in a supervisory contract?

- a. Expected supervisor behavior
- b. Expected supervisee behavior
- **c. Expected client outcomes**
- d. Purpose of the contract

Question 102 of 175

Which sentence has an autoclitic component?

- a. "His girlfriend's name is Jennifer"
- **b. "I feel like you are mad at me"**
- c. "Mommy is coming home"
- d. "I want to see you"

Question 103 of 175

What would be the best plan if your goal is to increase the fluency of a client's responses in an expressive labeling program that is currently on an FR 5 schedule of reinforcement?

- a. Change from an FR 5 to an FR 7 schedule

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- **b. Change from an FR 5 to an FR 5 with a limited hold**
- c. Change from an FR 5 to a DRH procedure
- d. All of the above

Question 104 of 175

What is the least preferred way to evaluate one's own effectiveness as a supervisor?

- **a. Self-monitoring**
- b. Client outcomes
- c. Supervisee outcomes
- d. Feedback from others

Question 105 of 175

A BCBA ® conducts a descriptive assessment and identifies a hypothesized function of a challenging behavior that is congruent with the indirect assessment data gathered from stakeholders, the client's school team, and the client's employer. The only problem is that the BCBA does not have experience conducting a functional analysis. What should she do?

- a. Repeat the descriptive assessment to see if the data remains consistent over time
- b. Conceive and manipulate the hypothesized environmental variables to test their effect on the behavior and identify and confirm the functional relation
- **c. Develop a behavior intervention plan based on the hypothesized function and systematically gauge the plan to make sure it is effective**
- d. Conduct a functional analysis as you need that to be sure that the hypothesized function is correct

Question 106 of 175

A school is having a reading contest to encourage more independent reading among their students. The class with the highest total of books read will be awarded a field trip to Disneyland. One of the classroom teachers decides to take this one step further and creates an additional contest within her class. In her contest, the student who reads the most books in the whole class will be given an individual reward. What would be the best graph for summarizing the individual progress of each student so that students can visually inspect who is winning the classroom contest?

- a. Cumulative record
- b. Line graph
- **c. Bar graph**
- d. Scatter plot

Question 107 of 175

What type of tact extension is exhibited in the statement, "This tact program is bomb!" - a. Generic tact extension

- b. Magical tact extension
- **c. Solecistic tact extension**
- d. Metonymical tact extension

Question 108 of 175

You decide to use chaining to teach your client to complete her homework assignment independently. The homework routine includes looking at a written description of the assignment, completing several pages in specific workbooks, reading five pages of a book, and writing a short passage. The homework must be completed daily. It should be noted that the client is able to do the individual tasks, but she is unable to complete the routine as a whole.

What chaining method would be best for this routine?

- a Forward chaining
- **b Total task chaining**
- c Backward chaining with leap ahead

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- d Single opportunity method task analysis

### Question 109 of 175

You supervise over 100 staff members. The company you work for divides the staff into three-person teams and each team is assigned to work with an individual client. Your job is to ensure that all the billable hours for each client are fulfilled each month. You decide to implement a reinforcement system to ensure that your staff fulfill all of the monthly hours. In this system, reinforcement is contingent on all of the client's billable hours being fulfilled. This would mean that all the staff members on that client's team would have to complete their assigned monthly hours in order for the entire team to earn the reinforcement. What strategy are you using?

- a. Independent group contingency
- b. Dependent group contingency
- **c. Interdependent group contingency**
- d. Codependent group contingency

### Question 110 of 175

Analís is supervising Soleil, a new RBT® at her agency. Analís and Soleil meet at the office bi-weekly to go over Soleil's clients' plans and interventions. Analís always provides Soleil with written materials that detail step by step descriptions of the interventions that Soleil must implement with her clients. This has been very helpful in ensuring that Soleil learns many ABA procedures. Additionally, Analís models the specific technologies, engages Soleil in role-play, provides feedback, and repeats the steps until Soleil is ready to practice in the natural environment. As a result of this amazing in-office training, Soleil learns a lot. In between meetings, Analís asks Soleil to email her with any questions and updates on the client's progress as well as on her own progress in meeting her performance expectations, which she reports via self-monitoring. Soleil's data reflects that both she and the client have improved greatly. What critical step in ensuring that Soleil carry out support plans proficiently and effectively did Analís violate?

- a. Having staff write progress reports and graph client behaviors
- **b. Routinely monitoring staff performance**
- c. Establishing clear performance expectations
- d. Providing a precise written description of the specific skills to be learned

Question 111 of 175

All of the following are disadvantages of indirect FBAs except:

- a. Informants are often not accurate
- b. Lack of evidence exists to support the reliability of information obtained
- c. Subjective in nature
- **d. Simple to use because they do not require observations**

Question 112 of 175

Which of the following describes an FI 7 min. schedule?

- **a. Reinforcement is delivered after 7 minutes pass and a correct response is provided**
- b. Reinforcement is delivered after an average of 7 minutes pass and a correct response is provided
- c. Reinforcement is delivered after every 7th correct response
- d. Reinforcement is delivered after every 7-minute interval

Question 113 of 175

You learn that your research from five years ago is being published in a major journal. You obtained informed consent prior to conducting the experiment. The client consented to involvement in the study.

What should you do?

- a. Nothing needs to be done, as informed consent was already obtained
- **b. Obtain informed consent for use of the data before it is disseminated**

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- c. Submit the previously obtained informed consent to the publishers of the specific journal
- d. All of the above statements are correct

Question 114 of 175

You have been redirecting your client to sing preferred songs instead of making loud vocalizations during the family's dinnertime routine at home. This was a great replacement behavior because the loud vocalizations were very jarring to other family members and when the client sings she uses a softer volume, so even though it's slightly disruptive it is so much easier to tolerate. Unfortunately, this is not a great replacement for other settings, so you have to ensure that the client understands when and where singing is an appropriate replacement. What must you teach the client to ensure that singing doesn't occur in other settings?

- **a. Conditional discrimination**
- b. Simple discriminations
- c. Response generalization
- d. Behavioral contrast

Question 115 of 175

Which of the following is a downside to giving written feedback?

- **a. It is difficult to directly measure how the feedback is received**
- b. It is not outcome-based
- c. It can't be delivered publicly
- d. It is hard to deliver reinforcement in writing

Question 116 of 175

Observer A 0 0 X 0 0 X X X

Observer B 0 0 0 X 0 0 0 X

To test for reliability, two observers collect data on the non-occurrence of a target behavior for eight timed intervals. Observer A recorded four intervals during which the behavior did not occur. Observer B recorded six intervals during which the behavior did not occur. There were seven intervals during which the behavior was marked as not occurring for both or one of the observers. They agreed on the non-occurrence of the behavior for three intervals. The observer agreement was 43%. Which method for determining interobserver agreement is described in this example?

- a. Total count IOA
- b. Scored interval IOA
- **c. Unscored interval IOA**
- d. Trial-by-trial IOA

Question 117 of 175

When making public statements to promote your work, which statement is most true?

- a. Only protect the confidentiality of your current clients and stakeholders
- **b. Prevent the use of artifact data in promoting your research results**
- c. Only use unsolicited testimonials
- d. Only promote non-behavior analytic work as behavior analytic, if it is labeled as such

Question 118 of 175

Treatment integrity should be reported using:

- **a. Percentage data**
- b. Accuracy data
- c. Trials to criterion
- d. Product measures

Question 119 of 175

## THE BCBA EXAM STUDY GUIDE

Tim rewards Brandon by taking away his chores when Brandon eats all of the vegetables on his plate. Brandon hates vegetables, but Brandon loves doing his chores. Therefore, Tim's plan is not successful in increasing Brandon's vegetable consumption. What would best explain why Tim's plan did not work?

**-a. There is no EO for Brandon to get out of his chores**

- b. There is no AO for Brandon to get out of his chores
- c. There is no SD for Brandon to get out of his chores
- d. Tim unintentionally reinforced Brandon's resistance to vegetables

Question 120 of 175

How would you describe experimental control using the following rate data from a non-parametric design targeting aggressive behavior? Both independent variables are behavior-reduction procedures. Baseline: 35, 31, 30, 30, 33, 34, 32 Independent variable A:

15, 13, 13, 17, 16, 18 Independent variable B: 10, 11, 9, 8, 8, 10

- a. Experimental control was only shown for IV A
- b. Experimental control was only shown for IV B
- c. Stronger experimental control was shown for IV B
- **d. Stronger experimental control was shown for IV A**

Question 121 of 175

Which of the following does not describe an antecedent based self-management procedure?

- a. At the thought of calling an ex-boyfriend, you call your best friend instead
- b. Hector puts his homework assignment in his backpack the night before, so he doesn't forget to bring it to school
- c. Julisa puts her gym clothes on first thing in the morning, so that she is more likely to exercise

- **d. To minimize cursing in front of her kids, Sam puts a quarter in a jar every time she uses a curse word**

Question 122 of 175

Dr. Long wanted to be a BCBA ®, but being a Ph.D., he believed he should be exempt from the coursework and taking the BCBA exam. He wrote the BACB to ask for an exemption due to his extensive experience in behavior treatment. The BACB asked for a description of the nature of his work. He responded that he specialized in problems that are related to low self-concept, depressive moods, interpersonal difficulties, severe insecurities, and decreased ego strength. After reviewing this, the board found that he did indeed need to complete the coursework and take the exam. What dimension of ABA is violated in Dr. Long's work?

- a. Applied
- b. Valid
- **c. Behavioral**
- d. Effective

Question 123 of 175

(Continued from the previous scenario) In his correspondence with the BACB® Dr. Long also described the procedures he utilized in his work. Everything was described in such great detail that board members even joked that the procedures, though not behavioral, were so clearly outlined they could easily run the programs. The programs included: hypnotherapy for repressed memories, cognitive restructuring to replace negative thoughts, and redirection to reality when hallucinating. Dr. Long's rationale was based in Freudian theory, reality theory, and Jungian theory. Which dimension of ABA is violated in this scenario?

- a. Analytic
- b. Technological
- **c. Conceptually systematic**
- d. Behavioral

## THE BCBA EXAM STUDY GUIDE

### Question 124 of 175

You are a BCBA(R) working in a school setting and one of your special education students is receiving an inhome behavioral assessment. The BCBA ® who is assessing the client contacts you to collaborate and work together so that the in-home and school programs support each other. She asks for copies of the clients individualized education plan, school functional assessments and behavior plans, as well as permission to observe the client at school. The parents are very happy that the entire team will be working together to ensure success across settings. What should you do?

- a. Provide the in-home BCBA® all the needed documents, such as the behavior support plans and the client's IEP and allow them to observe the client in his classroom
- b. Ask the parents if it would be OK to share the documents and have an observation with the inhome behaviorist, and, if they say yes, provide the requested information
- c. Obtain informed consent from the BCBA®to ensure that none of the client's personal health information will be shared with anyone else
- **d. Obtain informed consent from the client's parents, allowing the school to share the documents with the in-home BCBA®, s well as approving their visit to the child's classroom**

### Question 125 of 175

What is not true regarding unconditioned reinforcers (UCRs)?

- a. They require MOs to be effective
- b. They do not require learning history
- **c. They are only effective with respondent behaviors**
- d. No prior pairing with other reinforcers is needed for a stimulus to be a UCR

Question 126 of 175

A behavior analyst is teaching the concept of "stranger." She presents her client with pictures of people that are "strangers" vs. "familiar" and provides differential reinforcement for correct responding. It takes her client 17 attempts to learn the concept of "stranger." This measurement describes:

**-a. Trials-to-criterion**

- b. Concept Formation
- c. Percentage correct
- d. Count

Question 127 of 175

While working with your client, you are interrupted by their sibling who is not your client, but is also engaging in challenging behaviors. Specifically, he keeps interrupting the session and impeding your ability to work with your client. In an effort to decrease the sibling's behaviors, you mention the disruption to the parent who immediately steps in and puts the child in a time out in his room. How would you describe what the parent did?

- a. Positive punishment
- b. Negative punishment
- **c. Default technology**
- d. Negative reinforcement

Question 128 of 175

Lucy, an actress, has been very lazy and not gone to any auditions in several months. As a result, she has not booked any jobs and has not received any income. Her agent thinks she is very talented and wants her to go on auditions, so she can get jobs and be a big star, which Lucy has always wanted. But the business is hard and Lucy is discouraged and has lost hope. When Lucy

## THE BCBA EXAM STUDY GUIDE

runs out of money and cannot pay her rent or buy food, she calls her agent and says, "Get me some auditions." In this example, the need for auditions is a:

- a. **CMO-T**
- b. CMO-R
- c. CMO-S
- d. CMO-P

Question 129 of 175

Playing games on his iPad was Joseph's strongest reinforcer. Nothing else was as successful in motivating correct responding. Joseph was so enthralled with his iPad that most of his toileting accidents happened when he was using the device. His ABA team implemented a procedure in which iPad access was restricted to when Joseph actually eliminated in the toilet. If he had a successful elimination, he was given the iPad for 15 minutes. What type of reinforcement procedure does this describe?

- a. Noncontingent reinforcement
- b. Premack Principle
- c. Positive reinforcement
- d. **Response deprivation hypothesis**

Question 130 of 175

Danny's parents are concerned about the amount of soda that Danny consumes in a day. Baseline data shows that Danny drinks approximately 15 sodas per day. They implement a procedure to decrease Danny's soda drinking, which includes giving Danny two dollars every day that he drinks no more than five sodas. This plan successfully decreases Danny's soda consumption because Danny, who is saving up for a new gaming system, is incredibly motivated by money. What ABA procedure did Danny's parents implement?

- a. DRO
- b. **DRL**
- c. Punishment

- d. DRH

Question 131 of 175

This type of measurement is best used when information about a behavior can be derived from counting the occurrence of that behavior in the presence of events that occasion that behavior:

- **a. Percentage**
- b. Count
- c. Rate
- d. Response latency

Question 132 of 175

In this phase of baseline logic for a reversal design, you can identify whether a previously predicted level of baseline responding will occur by terminating or withdrawing the treatment variable:

- a. Prediction
- b. Affirmation of the consequent
- **c. Verification**
- d. Replication

Question 133 of 175

Which of the following statements is true in regards to conducting research?

- a. Research means using experimental designs
- **b. A researcher can independently conduct additional research on the theme of their approved dissertation**
- c. Confidentiality in research means protecting identified conflicts of interest
- d. Research data must be retained for seven years

Question 134 of 175

## THE BCBA EXAM STUDY GUIDE

Ilya called all large burgers Big Macs. It didn't matter if he was at McDonalds, Wendy's, or a fancy gourmet burger joint, he would always ask for a Big Mac. What term best explains Ilya's behavior of calling all large burgers Big Macs?

- a. Response generalization
- **b. Stimulus generalization**
- c. Metonymic tact extension
- d. Solecistic tact extension

Question 135 of 175

Which of the following would not be considered a third party?

- a. School district
- b. Insurance company
- **c. A classroom teacher**
- d. Advocate

Question 136 of 175

Which of the following describes the least preferred way to ensure the maintenance of a staff's performance?

- a. Regularly monitoring staff behavior and providing feedback
- **b. Allowing staff to control the contingencies for their own behavior**
- c. Supervisor being present on a regular basis
- d. A Supervisor should control the contingencies that affect staff behavior

Question 137 of 175

Erica's new puppy has a lot of energy which presents as jumping on people, excessive barking, and tearing things up around her house. The dog trainer recommended a lot of physical activity

to reduce the puppy's challenging behaviors. The claim is that, if the dog is worn out he will have less energy with which to jump on people, bark, and destroy things. What best describes this strategy?

- a. Contingency-dependent antecedent intervention
- **b. Contingency-independent antecedent intervention**
- c. Response deprivation hypothesis
- d. Hi-probability response sequence

Question 138 of 175

Mrs. Warner likes to spontaneously call on students and ask them questions to see if they did their assigned reading. Jennie Lee rarely does her homework and does not like to make mistakes. Whenever she answers one of Mrs. Warner's questions incorrectly, she cries and pinches herself. This is extremely painful and has left a lot of marks on her hands. She asks Mrs. Warner not to call her anymore because the pinching has really hurt her hands. Mrs. Warner suggests that Jennie Lee be more consistent in completing her assigned work and maybe then, she won't make so many mistakes and won't pinch herself. This pep talk works and Jennie Lee starts to do her homework every night. How would you describe this change in her behavior?

- a. Automatic punishment
- b. Automatic reinforcement
- **c. Socially mediated reinforcement**
- d. Socially mediated punishment

Question 139 of 175

Which stimulus class analogy is correct?

- a. A roof, a hat, and a jar lid all belong to the same formal stimulus class
- b. Attention being diverted, a demand being placed, and access to a preferred item being removed are things that belong to the same temporal stimulus class

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- c. A pen, a marker, a crayon all belong to the same functional stimulus class - **d. All of the above**

Question 140 of 175

In reviewing your supervisees descriptions of a client's behavior, you identified descriptions like frustrated, unhappy, and insensitive. You revised these descriptions to be less inferred and actually observable, so that the operational definitions would be more \_\_\_\_\_ .

- **a. Objective**
- b. Concise
- c. Clear
- d. Complete

Question 141 of 175

An unintended change in the way that a behavior is measured is known as:

- a. Treatment drift
- **b. Observer drift**
- c. Measurement bias
- d. Observer reactivity

Question 142 of 175

What assumption of science is violated in the following description: Scott and Allison, who have been dating for months, have a huge fight but then make up. When Allison's friends ask her how was the argument resolved, she tells them that the fight just "kinda ended."

- a. Empiricism
- **b. Determinism**
- c. Parsimony
- d. Philosophical doubt

Question 143 of 175

In an ABA experiment, we have to consider that clients may behave differently in the presence of a novel observer, and this may threaten the internal validity of the experiment. This threat is a type of:

- **a. Measurement confound**
- b. IV confound
- c. Subject confound
- d. Setting confound

Question 144 of 175

Which scenario describes an effective method for creating a treatment integrity system?

- a. Hire experienced staff members, who have worked in the field for a minimum of five years, so that they are able to interpret behavior plans and progress reports prior to working with clients
- **b. Provide a clear description of the plan, train staff on implementing the plan, monitor staff performance, and provide reinforcement**
- c. Involve stakeholders in facilitating treatment integrity systems, so that they are able to evaluate their own and staff performance and provide feedback to supervisors
- d. Regularly monitor staff and provide general feedback at a later time

Question 145 of 175

What is a potential risk of ineffective supervision?

- a. Poor client outcomes
- b. Incompetent supervisees
- c. Negative working environment
- **d. All of the above**

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Question 146 of 175

Dr. Johnson thinks he is really funny and likes to crack a lot of jokes with his patients. Whenever he hits a patient on the knee with a reflex hammer, he says, "Hello!" at the same time. He makes this joke every time. This has had a strange effect on one of his patients who now kicks his leg up in the air every time he hears someone say, "Hello". What is the best description of why this patient does that?

- a. **s-s conditioning**
- b. S-R-S conditioning
- c. S-R-S pairing
- d. Operant conditioning

Question 147 of 175

When measurement is indirect, it is harder for researchers to justify the \_\_\_\_\_ of their findings.

- a. Reliability
- b. Believability
- c. **Validity**
- d. Accuracy

Question 148 of 175

Interval 1 2 3 4 5

Observer 1 0 X 0 0 X

Observer 2 0 X X X X

Use the data below to determine the IOA using Interval-by-Interval IOA:

- a. 33%
- b. **60%**
- c. 30%
- d. 40%

Question 149 of 175

Which assessment method can be used to analyze staff behavior?

- a. Functional analysis
- b. Component analysis
- **c. Sequence analysis**
- d. Parametric analysis

Question 150 of 175

Which of the following terms best describes the degree to which a functional relation in a study will hold under different conditions?

- **a. External validity**
- b. Internal validity
- c. Generative learning
- d. Reliability

Question 151 of 175

Which of the following antecedent interventions doesn't have to be functionally-equivalent with the challenging behavior?

- a. Noncontingent reinforcement
- **b. Hi-probability instructional sequence**
- c. Functional communication training
- d. Punishment

Question 152 of 175

Madeline hums regardless of if she is with other people or not. If people are around, she is not affected by their attention towards her when she hums. What is the function of Madeline's humming behavior?

## THE BCBA EXAM STUDY GUIDE

- a. Automaticity of reinforcement
- b. Attention
- c. Alone
- **d. None of the above**

Question 153 of 175

Which of the following statements regarding research conducted during service delivery is not true?

- a. Client welfare must be prioritized above the research
- b. Researchers must follow the ethics requirements for both research and service delivery
- **c. Professional services cannot be offered as incentive for participating in research**
- d. Professional services can be offered as incentive for participating in research

Question 154 of 175

You are using a total task chaining method to teach your client to make a few small meals for himself. Your first target is teaching him to make a sandwich. He is having a hard time remembering the very first step, which is taking the bread out of the bread basket. To help him, you place the bread basket in front of him, as you give him the directive, "Let's make a sandwich." This works quite well as, in the presence of the basket, he always responds with the correct behavior. What best describes what you are providing to help him correctly emit the first response in the chain?

- **a. A stimulus prompt**
- b. A response prompt
- c. An SD
- d. Graduated guidance

Question 155 of 175

If you read a written text verbatim, your behavior and the written text:

- a. Share point-to-point correspondence and formal similarity
- **b. Share point-to-point correspondence, but not formal similarity**
- c. Share formal similarity, but not point-to-point correspondence
- d. Don't share point-to-point correspondence or formal similarity

Question 156 of 175

This variation of a functional analysis should be used when it is potentially too dangerous to run a basic FA. In this shorter FA variation, the assessor measures the time between the EO and the first instance of the challenging behavior, ending the trial as soon as the behavior begins.

- a. Synthesized FA
- b. Precursor FA
- c. Brief FA
- **d. Latency FA**

Question 157 of 175

In a multiple baseline design across settings, the data reported across different environments are considered to be the:

- a. Independent variables
- b. Treatment variables
- **c. Dependent variables**
- d. Environmental variables

Question 158 of 175

When using this chaining method to teach novel behaviors, it is required that, before moving on to the next step, the cumulative completion of all the previous steps is completed in the correct order.

- **a. Forward chaining**
- b. Backward chaining

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- c. Total task chaining
- d. Task Analysis

### Question 159 of 175

A client you have been working with for almost three years has recently begun to exhibit severe headbanging behavior. You are compelled to understand this behavior and start to consider a course of treatment. What is the first thing you should do?

- a. Start a functional analysis. This is a dangerous behavior and needs an immediate functionally appropriate reduction procedure
- b. Start an extinction procedure. This is a dangerous behavior and needs an immediate intervention
- **c. Ask the stakeholders to contact a primary care physician and make sure the behavior is not being caused by a medical problem**
- d. Collect ABC data to determine the function of the behavior, as it is unethical to conduct a functional analysis on self-injurious behavior

### Question 160 of 175

Why is it important for behavior analysts to assess the effects of unknown treatments when collaborating with non-scientific professionals?

- a. To ensure best practice
- b. To be able to prove that any behavior change is the product of the ABA treatment and not something else
- c. To identify any safety concerns posed by the unknown treatment
- **d. All of the above**

### Question 161 of 175

You're teaching your students to write their names on lined paper. You start by writing their names in a light-yellow highlighter for them trace. Then, you gradually lighten up the yellow writing, diminishing the yellow letters into smaller lines, then dots until you completely remove any trace of yellow and the students write their names independently without any yellow writing to help them. This process best exemplifies:

**-a. Stimulus fading**

- b. Stimulus shape transformations
- c. Stimulus shaping
- d. Graduated guidance

Question 162 of 175

Simona's supervisee shared that he observed a questionable domestic situation and fears that his client's parents may be abusing him. He has observed several bruises and saw the client's father handling the child in what he believes to be an abusive manner. He doesn't want to report the incident because he would hate to get them in trouble if they didn't do anything wrong. What should Simona do?

- a. Report the abuse to the required authorities since her supervisee doesn't seem like he will
- b. Contact the client's funding source and ask them the best way to handle it
- **c. Ask and ensure that the supervisee report what he saw to the required authorities immediately**
- d. Report the abuse if the supervisee observes another incident to be certain of any concerning issues

Question 163 of 175

Your client says, "I don't know how," when asked to perform simple tasks that he does know how to do, like tie his shoes, close his jacket, put his homework in his backpack, and pour himself water. He says, "I don't know" so often that it presents as a perseverative behavior and you consider a response redirection and interruption procedure. Then you notice that each time he

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says, "I don't know how," his older sister completes the task for him. What hypothesized function best explains this client saying, "I don't know how," in the presence of having to complete simple tasks?

- a. Positive reinforcement
- **b. Negative reinforcement**
- c. Delayed reinforcement
- d. Automatic reinforcement

Question 164 of 175

Pairing an RBT® with the delivery of food, praise, and fun activities establishes the RBT as a:

- a. Primary reinforcer
- b. Generalized conditioned reinforcer
- c. Positive reinforcer
- **d. Conditioned reinforcer**

Question 165 of 175

During an extinction procedure to eliminate Janie's attention-seeking vocal outbursts, Janie starts throwing things across the room, which is a new behavior. Janie's team is stumped, as this has never been something that Janie has done. What is the best option to explain the throwing behavior?

- a. Resurgence
- **b. Extinction-induced variability**
- c. Behavioral contrast
- d. Extinction burst

Question 166 of 175

Of the options below, which goal is stated in the most measurable terms?

- a. By December, during instructional periods, Patrick will reduce the number of weekly time-outs he receives from five times-per-week to one time-per-week across one monthly average
- b. By December, during instructional periods, Patrick will reduce the number of times he engages in behaviors that result in time out from five times-per-week to one time-per-week across one monthly average
- **c. By December, during instructional periods, Patrick will increase raising his hand to get his teacher's attention from an average of 50% of opportunities to an average of 80% of opportunities across one monthly average**
- d. By December, during instructional periods, Patrick will reduce disruptive behaviors from five times-per-week to one time-per-week across one monthly average

Question 167 of 175

When creating rules for an organization, be sure to:

- a. Create rules based on the values of the organization, independent of staff input
- b. Create rules that are very detailed and thorough, including every aspect of the desired behavior
- c. Use specific rules for each individual to meet the individualized needs of specific staff
- **d. Use common sets of rules for the entire organization**

Question 168 of 175

Reviewing records at the outset of a case is important for all of the following reasons except:

- **a. To make data-based treatment decisions**
- b. To learn about any previously implemented treatments
- c. To Identity the medical history of a problem behavior
- d. To get a sense of the client's needs to ensure that you have the scope of competence to assess and treat that client

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Question 169 of 175

When is the best time to consider terminating services?

- **a. When agreed-upon goal criteria have been met**
- b. When interventions are not effective
- c. When the RBTTM assigned to the case is not able to continue working with the client
- d. When the client starts to receive other services

Question 170 of 175

Cynthia recently moved from Los Angeles to a very small town in Oregon where she accepted a job as a BCBA ® for the local school district. Upon arrival, she discovered that many client programs have been profoundly neglected and the client's families are extremely frustrated and angry. Inheriting all of these frustrations has really impacted Cynthia's mental health. She is more stressed than ever and decides to speak to a therapist in a mental health clinic at the local university. When she arrived for her intake meeting, she was surprised to find that her new therapist was a parent to one of the children under her supervision. Unfortunately, no other therapists are able to take Cynthia on at this time. What should Cynthia do in this situation?

- a. Sign a confidentiality agreement with the therapist. This is very important because Cynthia will be discussing people her therapist may know
- b. Remove the therapist's child from her caseload, so she can continue to see the therapist
- **c. Ask for a referral to a different therapist or find another way to get the needed support**
- d. Talk to the therapist and get her opinion. If there are no other options, she has to find a way to make this work.

Question 171 of 175

Which of the following is advised to ensure that you are acting in the best interest of the client?

- a. Do not disrupt services under any circumstances

- **b. Ensure that all services agreements include a plan of action for the continuation of services in the event of a disruption**
- c. When unable to continue providing services to a client, be sure to refer at least one provider to facilitate the continuation of services
- d. If services are interrupted for a reason out of your control, you are not responsible for facilitating a continuation of services

Question 172 of 175

What is the best example of an unconditioned response?

- a. Squinting your eyes when the eye doctor asks you to squint
- b. Getting sick at the sight of a wine bottle
- **c. Retracting your hand from a hot surface**
- d. Starting the race when you hear the word, "Go"

Question 173 of 175

In an FCT program, the client is being taught to appropriately ask for attention by tapping his mother's hand. The operational definition for the correct response is tapping his mother hand when attention is diverted. If the client taps too hard, a revision to the operational definition based on \_\_\_\_\_ is needed to ensure appropriate tapping.

- **a. Topography**
- b. Function
- c. Magnitude
- d. Intensity

Question 174 of 175

You are teaching your client to cut a straight-line using scissors. At first, she cuts any way that she can and you give her praise. Gradually, praise is only given for cuts that are closer and closer to the desired outcome of a straight line. As the line gets straighter and closer to the desired

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outcome, reinforcement is withheld for previous fewer straight versions. And finally, reinforcement is only given for the desired straight cut line and withheld for all other previously reinforced versions. What procedure is described in this example?

- a. Stimulus fading
- b. Stimulus shaping
- **C. Shaping**
- d. Differential reinforcement

Question 175 of 175

Which of the following is an unwanted effect of using reinforcers or punishers?

- **a. Transient effect**
- b. Extinction burst
- c. Bribery
- d. Habituation