Behavior-Change Procedures

Behavior analyst certification examination

19 tasks · 25 questions on the exam · BACB Test Content Outline (6th ed.)

This area covers the procedures behavior analysts use to change behavior: reinforcement, differential reinforcement, time-based schedules, conditioned reinforcers, antecedent variables, discrimination training, prompting and fading, modeling, instructions, shaping, chaining, trial-based and free-operant teaching, group contingencies, generalization and maintenance, punishment, emotional side effects and emergent relations. Questions give a case and ask which procedure to use or change, or what went wrong; the right answer follows the principle behind the procedure and the function of the behavior.

You should be able to: Given a case, you should be able to design, select or evaluate the behavior-change procedure that fits the function and the goal, and say what to change when the data show it is not working or producing side effects.

Every task: the key point and the trap

G.1 Design and evaluate positive and negative reinforcement procedures.

Positive reinforcement procedures deliver a stimulus contingent on the target response; negative reinforcement procedures remove or postpone a stimulus (a demand, noise, an aversive task) contingent on it.

Trap: If the behavior does not increase, the consequence was not a reinforcer under those conditions; the procedure, not the learner, needs to change.

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

Differential reinforcement of alternative behavior (DRA) reinforces a specific alternative response and withholds reinforcement for the problem behavior; differential reinforcement of incompatible behavior (DRI) is a form of DRA in which the alternative cannot occur at the same time as the problem behavior.

Trap: DRO reinforces the absence of the problem behavior for an interval, whatever else the person is doing; DRA reinforces a specific alternative behavior.

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

Time-based schedules deliver a stimulus on a fixed-time (FT) or variable-time (VT) schedule independent of behavior; noncontingent reinforcement (NCR) is the use of such schedules with the reinforcer that maintains problem behavior.

Trap: FT and VT schedules require no response for delivery, unlike FI and VI schedules, which require a response after the interval ends.

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

Conditioned reinforcers are established by pairing a neutral stimulus with existing reinforcers, presenting it just before or with the reinforcer, until it acquires reinforcing value.

Trap: Tokens are conditioned reinforcers only if they are paired with or exchangeable for backup reinforcers; tokens that never buy anything stop working.

G.5 Incorporate motivating operations and discriminative stimuli into behavior-change procedures.

Antecedent interventions alter motivating operations or discriminative stimuli before behavior occurs, often reducing problem behavior and increasing desired behavior without changing consequences.

Trap: Changing an antecedent's value (an MO) differs from changing what it signals (an SD), and both differ from changing consequences, which only affect future behavior.

G.6 Design and evaluate procedures to produce simple and conditional discriminations.

Simple discrimination: one stimulus controls the response; the response is reinforced in the presence of the SD and not in the presence of S-deltas (say red when red card is shown).

Trap: In a conditional discrimination, a comparison is correct only in relation to the sample; correct choices that ignore the sample reflect a simple discrimination or faulty stimulus control.

G.7 Select and evaluate stimulus and response prompting procedures (e.g., errorless, most-to-least, least-to-most).

Response prompts act on the response: verbal instructions, modeling, and physical guidance (gestural prompts are often grouped with them); stimulus prompts act on the stimulus: within-stimulus (changing the size, color or position of the correct stimulus) and extra-stimulus (adding an extra cue, such as an arrow).

Trap: Most-to-least starts with the most help and reduces it; least-to-most starts with independence and adds help only when needed.

G.8 Design and implement procedures to fade stimulus and response prompts (e.g., prompt delay, stimulus fading).

Prompts must be faded so behavior comes under control of natural stimuli; prompt dependence results when prompts are faded too slowly or not at all.

Trap: In prompt delay, what changes is the time before the prompt is given, not the type of prompt; stimulus fading changes a feature of the stimulus prompt itself.

G.9 Design and evaluate modeling procedures.

Modeling is demonstrating a behavior so the learner imitates it; it can be live, symbolic (pictures, videos), video self-modeling (the learner sees an edited video of themselves performing correctly), or peer modeling.

Trap: Modeling only works if the learner has the prerequisite skills of attending and imitating; a learner without generalized imitation needs imitation training before modeling.

G.10 Design and evaluate instructions and rules.

Instructions and rules are verbal stimuli that describe what to do and often the contingency (if you do X, Y will happen); they produce rule-governed behavior that can change quickly without direct contact with consequences.

Trap: A rule that does not describe the behavior specifically, or that is never followed by its stated consequence, is unlikely to control behavior over time.

G.11 Shape dimensions of behavior.

Shaping is the differential reinforcement of successive approximations to a terminal behavior: responses closer to the target are reinforced, and earlier approximations are put on extinction.

Trap: Shaping changes the response requirement for reinforcement across approximations; fading changes the antecedent prompt while the response stays the same.

G.12 Select and implement chaining procedures.

A behavior chain is a sequence of responses in which each response produces a stimulus change that reinforces it and serves as the SD for the next; the terminal reinforcer follows the last response.

Trap: In backward chaining the learner completes the last step first and reaches the terminal reinforcer on every trial; in forward chaining the first step is taught first.

G.13 Design and evaluate trial-based and free-operant procedures.

Trial-based procedures, such as discrete-trial teaching, present instruction in distinct trials: an SD, a response, a consequence, and an intertrial interval; the instructor controls the pace and the number of opportunities.

Trap: Free-operant means the learner can respond at any time with unrestricted opportunities; in trial-based teaching the instructor controls when each opportunity occurs.

G.14 Design and evaluate group contingencies.

Independent group contingency: the same contingency applies to every member, but each person's reinforcement depends only on their own behavior (any student who finishes the work earns free time).

Trap: In a dependent contingency the group's reward rests on one person's or a few persons' behavior; in an interdependent contingency it rests on everyone or on the group as a whole.

G.15 Design and evaluate procedures to promote stimulus and response generalization.

Generalization must be planned, not hoped for (train and hope is the weakest strategy).

Trap: Teaching one perfect example in one setting with one instructor produces tight stimulus control, which often prevents generalization.

G.16 Design and evaluate procedures to maintain desired behavior change following intervention (e.g., schedule thinning, transferring to naturally occurring reinforcers).

Maintenance is planned from the start, by choosing behaviors that will contact natural reinforcement and by teaching to fluency.

Trap: Abruptly removing reinforcement after acquisition produces extinction, not maintenance; reinforcement is thinned gradually and replaced by natural reinforcement.

G.17 Design and evaluate positive and negative punishment (e.g., time-out, response cost, overcorrection).

Positive punishment procedures add a stimulus contingent on behavior: reprimands, response blocking (which may function as punishment or extinction), contingent exercise and overcorrection (restitutional overcorrection restores the environment to a better state than before; positive practice overcorrection requires repeated practice of the correct behavior).

Trap: Time-out for behavior maintained by escape can function as negative reinforcement, because it removes the person from the demand.

G.18 Evaluate emotional and elicited effects of behavior-change procedures.

Extinction can produce an extinction burst, emotional responding (crying, anger) and extinction-induced aggression, as well as resurgence and spontaneous recovery.

Trap: Emotional responses during extinction are elicited side effects that should be anticipated and measured, not signs that the procedure is working or failing by themselves.

G.19 Design and evaluate procedures to promote emergent relations and generative performance.

Procedures that promote emergent relations train some relations so that others emerge without training, increasing the efficiency of teaching.

Trap: Testing for emergent relations is done without reinforcement for the tested relations; reinforcing them during the test turns the test into training.

Key terms

DRA: Differential reinforcement of an alternative behavior while withholding reinforcement for problem behavior.

DRO: Reinforcement delivered when problem behavior has not occurred for an interval or at a moment.

DRL: Reinforcement of responding at a low rate or after a minimum interresponse time.

Noncontingent reinforcement: Delivery of the maintaining reinforcer on a time-based schedule independent of behavior.

Token economy: A system of conditioned generalized reinforcers exchangeable for backup reinforcers.

Most-to-least prompting: Starting with the most intrusive prompt and reducing assistance.

Least-to-most prompting: Starting with an independent opportunity and increasing assistance only when needed.

Prompt delay: Fading by increasing the time between the SD and the prompt.

Shaping: Differential reinforcement of successive approximations to a terminal behavior.

Backward chaining: Teaching a chain from the last step, with the learner contacting the terminal reinforcer each trial.

Interdependent group contingency: Reinforcement for all depends on all members or the group as a whole meeting the criterion.

General case analysis: Selecting teaching examples that represent the range of variations in the natural environment.

Overcorrection: Restitution or positive practice required contingent on problem behavior.

Exclusion time-out: Removing the person from the setting for a period contingent on behavior.

Matrix training: Teaching some combinations of elements so untrained combinations emerge.

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