Analytical:

How do I know my teaching is...

Analytical: What caused a behavior change?

How do you know what caused a change in behavior?
- How do you know that the teaching procedure caused the behavior change.
- How do you know that the teaching procedure was done correctly?

Analytical: What caused the behavior change?

Correct Echoic Responses

IOA= 75-100%
- IOA is good (data are reliable)
- Behavior changed

What caused the changed?
What caused the change in behavior?

Was it the teaching procedure?  
Or...

Auditory Processor  
Kicked in?

Developmental changes?

Full Moon!

Wicked Witch  
from the West

Analytical: What caused a behavior change?

One method to determine what causes a change IS  
REPLICATION

Can you turn a response ON  
OFF

Analytical

How do I know my procedures are analytical?

Research-based effective treatments  
• Journal of Applied Behavior Analysis (JABA)  
• Behavior Modification (BM)  
• Behavioral Interventions (BI)  
• Journal of Autism and Developmental Disabilities (JADD)  
• Education and Treatment of Children (ETC)

Most behavioral research must demonstrate that a procedure, in fact, controls a target (DV) response.
Analytical: Experimental Designs

Replication: ABAB designs

ABAB Design and Ethics
Can't withdraw a successful procedure

Demonstration that a procedure caused the change

Multiple Baseline Designs
Mand training to ask for information procedure across WH questions

Multiple Baseline Design demonstrates that the procedure produced the behavior change
So, my teaching is applied, behavioral, and analytic because I'm using teaching procedures from studies that have been replicated but,

How do I know my teaching is

Technological
Procedural Fidelity / Treatment Integrity

Technological is NOT: “Using...”
SRA “Skill Builders”
Houghton and Mifflin’s Reading Programs
Whole Language Approach
Phonetic Approach
Multi-sensory Approach
Most Commercial Available Programs

Especially for early learners

Procedural Fidelity / Treatment Integrity

Procedural Fidelity requires
• a clear description of all the teaching steps
  • teacher responses
  • correct answer
  • incorrect answer (what do when student makes errors)
• Description of materials and how to use them

Sufficient detail
• Exactly implemented by others

Procedural Fidelity

Critical for some early learners that have few skills and those with behavior intervention plans (BIPs)

no verbal behavior
doesn’t understand language
can’t imitate actions
doesn’t play with toys
can’t select things when asked
don’t look at teacher or materials
Procedural Fidelity: It's important

Effects of Procedural Fidelity Levels on Teaching Compliance Responses

- Varied levels of treatment integrity (TI)
  - 100%, 50%, 0%

- DiGennaro, Reed, Baez, & Maguire (2011)
- DiGennaro, Martens, & Kleinmann (2007)
- Wilder, Atwell & Wine (2006)
- Gresham (1989)

- 100% (all steps correct)
- 50% (half the steps correct)
- 0% (no steps correct)

- Correct responses: 0, 2, 4, 6, 8
- Correct responses range: 1 to 10

Are research procedures completely described and assessed?

Procedural (treatment) Integrity


Reviewed 60 articles for the presence of
- operational defined procedures and
- measures of procedural integrity
- 11 of 60 (18%) operationally defined and assessed TI

Alarm bell: we may not be using procedures that have been properly assessed. Read research carefully. Look for clear treatment descriptions and measures of treatment integrity.

Developing Procedural (treatment) Integrity (TI) Checklists

Procedural integrity checklists

General
- classroom organization
- general teaching routine

Detailed
- all responses (student and therapist)
- prompting procedures
- error correction procedures
- responses to be reinforced
- unexpected responses
- durations of instruction, reinforcement, response latencies, etc.
- Data sheet
- Data instruction (how and when)
Treatment Integrity Checklists For Session

**Teacher actions**

- **Area 1: Organization**
  - **Teacher**
  - **Rate of responding**
  - **# correct responses / minute**

**Area 2: Instructional Delivery**

- Begins session with pairing/manding
- Ends session with manding
- Teaches to fluency
- Positioned at child’s eye level

**Area 3: Reinforcement**

- Delivers reinforcer quickly when instruction is complete
- Uses a variety of reinforcers
- Sr+ Reinforcer competes with Sr
- Differentially reinforces responses
- Pairs social reinforcement w/ tangible items
- Maintains composure during procedures
- Correctly implements extinction procedures
- Implements effective antecedent interventions
- Adjusts reinforcer ratio based on student performance
- Uses transfer trial after prompted response
- Appropriate ratio of easy vs. difficult tasks
- Mixes verbal operants
- Gives clear/discrete directions and prompts
- Establishes instructional control
- Clarifies expectations for appropriate responses
- Describes response (sitting at table)
- Puts picture in correct container
- Folds hands
- Say, “Fold your hands”
- Record data. “Fold hands”
- Puts incorrect picture in correct container
- Say “match [name] and”
- Activity: _________________________
- Staff present: _________________________
- Did you have a variety of mand items available including the name of the item?
- Did you run 3 trials, did you immediately reinforce when she emits it (with: ____________)?
- If target approximation not emitted, did you run 3 trials, did you immediately reinforce when she emits it (with: ____________)?
- If MO present, did you model the adult form when you change array position on every trial included correction trials.
- Did you change array position on every trial included correction trials.
- Did you have the word shells available?
- Alter the picture sets array on every trial included correction trials.
- Did you have the word shells available?
- Did you have OM look at each as you say the name.
- Did you say “match [name] and”
- Did you say “match [name] and”
- Student selects the correct to a vocal stimulus. Don’t count incorrect MTS.
- Student selected the correct to a vocal stimulus. Don’t count incorrect MTS.
- Did you select the correct to a vocal stimulus? (with less wait in seconds)
- If she did not emit the response after the 3 trials, did you reinforce that when she emits it (with: ____________)?
- If target approximation not emitted, did you run 3 trials, did you immediately reinforce when she emits it (with: ____________)?
- Did you have a variety of mand items available including the name of the item?
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How Much Treatment Integrity (TI) Data?

Research Standard:
30% of sessions

Applied Standard:
Recommended
No minimum

Believability

Less

More

- Samples TI during supervision
- Video tape and assess TI

Believability: Look at percentages

More frequent TI observations

0 %

TI percentage

100%

Less frequent TI observations

Integrity percentages

IOA and TI Presentation

Inter-observer agreement (IOA): percentage of point by point intervals
Treatment integrity (TI): percentage of procedural steps correctly implemented
Taking Treatment Integrity and IOA

Arguments Against:
- Don't have the time
- Insurance doesn't pay for it
- There's no one to do it
- Not necessary in applied settings like schools and homes
- Only needed if you want to publish

Arguments For:
- IOA indicates: reliable data of the person you're helping
- Treatment integrity indicates: a procedure was implemented correctly
- IOA and TI together indicate:
  - a change in behavior actually happened and it was the procedure responsible for that change in behavior

Organizations that require TI and IOA

PaTTAN

- Billable under some funding sources as part of supervision
- Trumpet Behavioral Health:
  - mandates therapist receive completed PI assessments
  - live PI performances every 2 weeks (newer therapists more frequently)
  - PI performances are part of performance management system
- IOA collected during supervision visits
- PI and IOA part of supervisor’s performance management system

Ok, my teaching is **applied, behavioral, analytic, and technological** because my procedures completely described and implemented correctly others, but...

How do I know my teaching is **Conceptual**
are our procedures informed by our discipline and are they based on principles of behavior.

Principles of behavior

- Reinforcement
- Punishment
- Extinction
- Satiation
- Habituation
- Motivating Operations (MO)
- S\_delta
- S\_D

Other ideas

- Readiness
  (lacks prerequisite skills)
  (inadequate teaching procedure)
- Doesn’t have concept
  (inadequate reinforcement)
  (inadequate teaching procedure)
- Lacks Motivation
  (insufficient reinforcement)
  (inadequate reinforcers)
  (boring procedures or materials)

Conceptual

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Effective

Did the procedure work?

Do our graphic displays tell the story?
Can we interpret the graphs?

Disruptive Behavior

Frequency of disruptive behavior during baseline and during a DRO 15-minute conditions
Are we interpreting our displays correctly?

Disruptive Behavior

Frequency

Weeks

Baseline range

DRO 15min

50% of treatment data overlap baseline

nice separation?

Frequency of disruptive behavior during baseline and during a DRO 15-minute condition.

Generality is NOT THE SAME as generalization

[Referring to generalization:] “dangerous belief that by producing behavioral change the individual has somehow been changed and that it is this changed person who goes into other settings. It must be remembered that we do not change or control the individual's behavior—the environment does.” p2

“It can be argued that this whole perspective surrounding generalization is dangerously close to a mentalistic concept masquerading in behavioral raiment (clothing)” p2

[Referring Stokes and Baer (1977)] “Thus, generalization is intentionally defined in conflict with its formal and standard use...to include behavior changes that certainly are the result of other behavioral processes” p2


Generality is NOT THE SAME as generalization. Generality refers to replicability.

Consider Generality from Research to Treatment to Target

Can We Reproduce Results Across:
- person (e.g., age, sex, cultural)
- diagnosis (e.g., ASD, dementia)
- setting (e.g., home, school)
- social (e.g., peers, adults, teacher)
- response (e.g., mand)
- reinforcers (e.g., social, tangible)
- schedule (e.g., fixed, signaled, variable)
- procedure (e.g., DRA, SSP, RMIA)

References:
- Diamond, Jared (1997), Guns, Germs, and Steel. W.W. Norton & Company