Behavior Basics for Children with Autism

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PATTAN

Autism Initiative ABA Supports

Pennsylvania Training and Technical Assistance Network

Introduction

- Aggression and self injury, along with other problem behaviors, are common in individuals who present Autism Spectrum Disorders and other developmental disorders.
- There is much that is not fully understood about these behavior patterns nor are there any easy answers in many cases. Each Case is unique.
- There are, however, systematic approaches that are powerful and are evidence based
- At any rate, solving these problems involves careful attention to detail, teamwork, and persistence and patience.

- This is a basic session focused on behavior management for children with autism
- It can not be "all things to all people"
- Will stick to basic principles that should have wide range of applicability
- Will avoid being too technical although technical descriptions may occasionally be needed

Don't blame the child

- Children do what they know (what they have learned)
- We all do what "works" (makes things better for us)
- What works is determined by a relationship between what we do and how the world responds

Don't blame yourself

- There are many factors that effect behavior
- We just do what we know (what we have learned: what has worked to make things better for us)
- Working to solve problems involves caring deeply enough to do something different

AND

- Remaining calm enough to be objective

What is this thing called "Behavior"?

- Behavior is what the person does
  - Observable
  - Measureable
  - Actions/movement

Behavior: It's not isolated things!

- Everything we do is behavior; it occurs continuously
  - Walking, jumping, eating, breathing
  - Thinking, feeling, sensing
  - Some behaviors are not easily available for observation
- Behavior does not occur in a vacuum: we do things in an environment; behavior changes the environment
- Behavior may be hard to predict, but making it more predictable is always a good first step

It's all behavior

- "good" or "bad": it's just what a person does
- All behavior follows a few basic rules

The ABCs of behavior…

The ABCs

- Antecedent
- Behavior
- Consequence

- What happens before and after a behavior allows prediction
  - If we can predict we can get some control

ABCs: examples

Antecedent	Behavior	Consequence
• Something interesting happens	• Look in that direction	• Seeing the event
• Someone asks "name an animal with a mane."	• One says "lion"	• The other person nods and says "yes, a lion has a mane"
• Driving and the traffic light turns red	• Depress brake pedal	• Car stops
• Spoon on table	• Reaching toward it	• Touching spoon

ABCs: examples

Antecedent	Behavior	Consequence
•Demand is given	•Child screams "no!"	• Compliance delayed or demand removed
•Child wants to wear red shirt that is dirty	•Child scratches	• Offered better Pokemon shirt
•Demand is given	• Child follows direction	• Parent talks about Pokemon with child
•Child wants to wear red shirt that is dirty	• Child is prompted to ask for Pokemon shirt	• Offered better Pokemon shirt

Making Behavior More Predictable

- Requires understanding of patterns of responses
- Across time and conditions
- Patterns are not always easy to see
- Requires systematic observation
  - Count or measure behavior
  - Relate the behavior to events

Brian Iwata: 3 Critical Components of Effective Behavior Plans

- Reduce motivation for problem behavior
  - Make it so they don't want to do it!
- Teach a skill that is appropriate and accomplishes the same thing
  - Make it so they don't need to do it!
- Use extinction if problem behavior occurs
  - Make doing it ineffective and inefficient

All three steps are based on "Function"

- Function = reinforcement

- Reinforcement: a consequence that increases the future probability of behavior
  - Both positive and negative reinforcement increase behavior
  - Not all consequences are reinforcers (Brian Iwata: the sneeze effect)

ABCs of behavior

- Reinforcement makes the world go around
- It's a consequence but doesn't work on the current instance of behavior, only on future instances
- Reinforcement not always obvious, not always simple (environments are complex and multiple events can occur at any one time)
  - This is especially true for children with ASD across functional levels

Antecedent	Behavior	Consequence

Motivating Operation (MO)
Alters value (establish/abolish)
Evokes/Abates behavior
	Response
	• What student does
	• Observable
	• Measurable
		Reinforcement
		• Increases future probability of behavior
		  – Positive
		  – Negative
		  – Socially Mediated
		  – Automatic

Discriminative Stimulus(S^D) Signals availability of reinforcement		**Punishment** • Decreases future probability of behavior **Schedule of Reinforcement** • Intermittent reinforcement • VR: Reinforce on average, strong and steady
Prompts Procedural use of discriminative stimuli		**Extinction** • Reinforcement no longer happens • Behavior fades

Causes of behavior

- We "behave" or do things to change our immediate world
- How things change as a result of what we do make it more or less likely that we will do the same thing in the future
- When things get better, we do what happened just before more often
- If things get worse, well then, we do whatever we did just before less often

Functions

Function in Common Terms	Function in Technical Terms
Attention	Socially mediated positive reinforcement
Tangibles	Socially mediated positive reinforcement
Escape	Socially mediated negative reinforcement
Self stimulation	Automatic positive reinforcement
Pain attenuation	Automatic negative reinforcement

What to observe and how to observe

- If the problem behavior is worth fretting about; it is worth doing something about
- If it is dangerous, something must be done
- Define it: observable and measureable
- Count it: how often does it occur? When does it occur?
- What are we doing before problem behavior occurs? (alone, demand, block access)
- What do we do after problem behavior occurs? (ignore, react, give something, sooth)

Simple ways to count

- Clicker counter and graph
- Scatter plot: tally and graph

Scatter Plot Data Sheet_____
Date: _____

Date	Times					
	8-9	9-10	10-11	11-12	12-1	1-2
Monday						
Tuesday						
Wednesday						
Thursday						
Friday						
Saturday						
Sunday						

Time Sample Recording Sheet

Date: _____   Target Behavior: _____

Student: _____

Interval	Did problem behavior occur?	Notes
	Yes No	
	Yes No	
	Yes No	
	Yes No	
	Yes No	
	Yes No	
	Yes No	
	Yes No	
	Yes No	
	Yes No	
	Yes No	
	Yes No	
	Yes No	
	Yes No	
	Yes No	
	Yes No	
	Yes No	
	Yes No	
	Yes No	
	Yes No	
	Yes No	
	Yes No	
	Yes No	
	Yes No	
	Yes No	
	Yes No	
	Yes No	
	Occurrences = _____ Total intervals =	X 100 = % Occurrence of target behavior

Things ("variables") that effect our behavior

- Our physiology: genes, brain, body, hormones, etc.
- Our culture: what other people around us value and respond to
- Our own history of doing things and how things change as a result of what we do: this is our learning history
- None of these variables work in isolation

Of the three things

- Physiological variables may set the stage for certain behaviors to be more likely:
  - Most of us can't do much about physiology; medical issues should be addressed carefully by medical providers
- Culture changes at a relatively slow pace
  - Short of moving to and adopting a new culture, not much you can do about this

3 components of an effective plan

- Motivation
  - Alter the value of the reinforcer
- Teach alternative skill
  - Very doable in most cases
  - If you know what to teach
- Extinction: reduce effectiveness
  - May be a challenge and have secondary effects
  - May also be absolutely necessary

Altering Motivation

- If we look at motivation as resulting from changes in the environment, we can go about altering motivation.
- Motivation:
  - Alters the value of a reinforcer (learned and unlearned)
  - Changes the frequency of behavior
  - *Establish Evoke Abolish Abate*

Altering Motivation

- Contrive and capture
- Satiate or deprive
- A change in circumstances alters the value of another event: Conditioned Motivating Operation-Transitive; (CMO-T)
- Reduce the value of escape: the Conditioned Motivating Operation-Reflexive (CMO-R)
- CMO-Rs operate as warning signals
- *videos*

Reducing the CMO-R derived from Carbone, et al , 2010

- Pair with reinforcement
- Ease in demands
- Reduce response effort
- Errorless teaching
- Vary schedule of reinforcement
- Teach to fluency
- Mix and vary tasks
- Intersperse easy and hard tasks
- Pace of instruction
- Place off task responses on extinction

The role of certain physical treatments

- Diet, sleep, medication: serve to alter motivation
- They do not, in and of themselves, reduce problem behavior

A side note on working with medical providers

- Diet, psychopharmacological, and other medical treatments should be monitored by physicians AND
- Should be informed by measures of behavior (such as daily counts of how often behavior occurs) from school, home, and other settings
- Verbal reports are notoriously unreliable!
- Medical interventions should work in tandem with interventions to teach new behaviors

Enrich the Environment

- Engaged children have little reason to emit problem behavior
- Engagement in other activities may reduce MO to engage in problem behavior
- Study what children like
- Keep children busy

Teaching is the way to go!

- Brian Iwata second requirement is to teach a competing behavior

Teaching is the way to go!

- Antecedent interventions: an ounce of prevention is worth a pound of cure
- Can't do something unless you know how
- Even if you do know how, you might not do it
- No one sits in the fire very long (if things get worse, we try to escape)
- The playground dilemma (coming in from the playground occurs only once)

General Ways to make behavior better through teaching without complex plans

- Adults as signals that suggest possible outcomes (due to pairing with reinforcement)
  - Eye contact
  - Tone of voice
  - Arm movements
  - Other directional movements
  - Plus some ideas, such as "ready hands' (to be detailed a little later)
- How to talk with children (or not talk as the case may be!)

How to talk with children

- Say what you want them to do
- Do not call undue attention to problem behavior
- Talk more about things you want to see happen and less when problem behavior occurs
- Talk is cheap: be sure that you back up any statements
- Do not say things you are not going to back up! (Don't threaten)
- Too many mands lead to avoidance!
- Avoid denigrating, blaming child, whining
- Behavior specific praise and feedback
- Tone of voice

Learning

- Since we can change what goes on around the child, this is a very important variable!
- It allows us to control things that can make a difference
- It is not always easy or a quick fix!

Some things that may not work

- "Warnings" or advanced notice (see work of David Wilder)
- Stating the rationale for the transition or direction
- Labeling the problem behavior
- "I" statements: "I don't like it when…"
- Stating why you think the behavior is occurring ("you're doing this to be mean"; "you just do this to drive me crazy", etc.)

Reasoning

- Only works with children who have verbal skills and then only if your reasons are backed by facts
  - Complex relations between words and events
  - "be good" example
- However: reasoning will be important for children and teens who can "reason" (verbally problem solve)
  - Involves rule governed behavior: must be backed up!
  - Explicit directions: state the contingencies that are in place
  - Peers more important than adults

  - Skill Streaming and other social skills

Are meltdowns the result of "sensory needs?"

- Attributing "meltdown" behavior (temper tantrums, property destruction, screaming, crying, "storming", etc) to sensory function (automatic negative reinforcement) can be tricky territory
- A problem: everything is sensory
- Fishing out which stimuli evoke meltdowns may be difficult
- Danger of reinforcing unwanted behaviors
- Simpler answers may be more likely:
  - want something
  - want to escape something
  - missing some skill set
- Sensory sensitivity may serve as a motivation: it alters the value of other reinforcers
- This is not to say that students with autism do not respond differently to various stimuli than most people

Good instruction

- Explicit
  - Structured enough to allow easy learning
  - Loose enough to allow flexible responding
- Builds and plans for generalization
- Active responding
- Teaches skills for the real world

What to teach? Common Issues

- Use of "promise reinforcer"
- Mand
- Cooperation
- Ready hands
- Wait
- Give up reinforcer
- Interruption transition
- Accepting "no"

Step 3: What if problem behavior occurs?

- Use of extinction
- A conundrum: extinction effects
- Things get worse before they get better

Effective use of extinction

- Response Interruption and Redirection
- Time out
  - Count and mand
  - Duration of time out issue
  - Return to opportunity to access reinforcement
- Escape Extinction
  - Safety issues
  - Inadvertent problems
  - Reinforcing early in chain if needed

Be careful to not be reinforced for ending problem behavior. Instructors can usually feel good by ending problem behavior by reinforcing it, but short term gain will make for long term pain (both for the student and the instructor).

There are exceptions, however.

Immediately ending problem behavior may mean you have reinforced it.

Sometimes problem behavior is quite serious

- SIB
- Aggression
- Property destruction
- Elopement

Chapter 14 Regulatory Issues: A Brief Review

- Positive rather than negative (freedom from aversive and demeaning treatment). Positive reinforcement in PBS.
- Research based practice
- Functional assessment
- Least intrusive requirement
- Restraints last resort (restraint= physical force and restraining free movement; except h/h and hold w/out force to calm, certain OT/PT devices, seat belts, safety harness)
- Restraints only used when clear and present danger and only when less intrusive measures fail
- Parental notice of restraint use; IEP w/in 10 days unless parent waives
- Only in IEP if certain conditions met (part of PBSP, part of teaching alternative skills, staff trained; plan for eliminating use.)
- No Prone restraints

- "Aggression has been found to be more common among individuals with ID than among those in the general population (Holden & Gitleson, 2006) with an added risk factor for aggression for those individuals with a dual diagnosis of ASD and ID (Hill & Furnis, 2006; McClintock, Hall, & Oliver, 2003)."

- "The rate at which individuals with ASD present with ID has been estimated at 70% (Fombonne, 1999), and within these populations aggression is one of the behaviors most likely to be identified for intervention (Didden, Duker, & Korzilius, 1997; Horner, Carr, Strain, Todd, & Reed, 2002)."

> both from Brosnan & Healy, 2011

Studies Involving Functional Analysis
Hanley, Iwata & McCord, 2003

Topography	Number of Studies	Percentage of sample
Self-injury	179 (130)	64.6 (4.6)
Aggression	113 (46)	40.8 (1.6)
Disruption	53 (19)	19.1 (6.9)
Vocalizations	35 (16)	12.6 (5.8)
Property destruction	29 (2)	10.5 (0.7)
Stereotypy	25 (17)	9.0 (6.1)
Noncompliance	12 (1)	4.3 (0.3)
Tantrums	10 (1)	3.6 (0.3)
Elopement	8 (1)	2.9 (0.3)
Pica	7 (3)	2.5 (1.1)
Other	10 (0)	3.6 (0)

Common Forms of Aggression and Self Injury for Individuals with ASD and other DD
(not in any particular order)

Aggression	Self Injury
1. hitting/slapping	1. head slapping/hitting
2. kicking	2. head banging
3. pinching	3. biting hand/other body parts
4. biting others	4. self pinching
5. throwing items	5. jaw popping
6. spitting	6. eye poking/gouging
7. pushing	7. throwing self to floor/ "flopping"
8. head butting	8. ingesting in-edibles/pica
9. grabbing	9. ear pulling
10. hair pulling	10. chocking self/gagging self

What causes aggression and self injurious behaviors?

- Aggression and self injury are behaviors, they are things people do.
- Aggression and self injury are purposeful; they serve to alter ongoing circumstances.
- The history of the individual coupled with biological/neurological variables alter the probability of problem behavior
- Main classes of circumstances that alter the frequency of these behaviors:
  – Attention
  – Tangibles
  – Escape
  – Self stimulation
  – Pain attenuation

Prevalence of Function

Aggression (Hanley, Iwata & McCord,2003 N=52)	Self Injury (Kurtz, et al 2003; N=24)

Positive reinforcement   29%
    Attention 17%
    Tangible 12%
Negative reinforcement 46 %
Multiple 19%
Automatic reinforcement 2%
Undifferentiated   4%
	Positive reinforcement 62.5%
	    Attention
	    Tangible
	    attention and tangible
	Negative reinforcement 4.2 %
	Positive and Negative Reinforcement 16.6%
	Automatic reinforcement 4.2%
	Undifferentiated 12.5 %

Steps in Addressing Problem Behavior

- Functional Analysis
- Baseline frequency or duration data
- Functional Hypothesis Statement/statements
- Behavior Plan (designed by all identified functions)
  - Address motivation
  - Teach competing skill
  - Adjust consequences: extinction and other methods to insure behavior is inefficient and ineffective
- Implement with fidelity
- Monitor plan (fidelity checklists)
- Adjust plan based on data/effectiveness
  - Both for motivation, instruction and consequence

Classroom Arrangement

- Do you have immediate access to every part of the room?

- Can you see every setting where students will be spending their time (no dead space)?

- Do you have adult and student schedules in a prominent place?

- Are materials for instruction readily accessible?

- Can student easily select/replace materials?

- Do you have designated areas for various activities?

FBA: treatments selection

Saul Axelrod: Most interventions are selected based on premises other than functional relations such as:
- Interventions familiar to the teacher
- Interventions that worked in the past with other students
- Topography based interventions (i.e., timeout for hitting)
- Simply on ease of implementation

Selecting interventions by topography may actually worsen rate of behavior problems (i.e.; Time out for behaviors maintained by socially mediated negative reinforcement).

FBA

- FBA can be thought of as a reinforcer assessment of sorts (Neef and Peterson, 2007 in Cooper, Heron, & Heward, 2007)
- "Function" as used by behavior analysts is a term that is similar to reinforcement. When one looks to find the function of a behavior one is looking to determine what variables likely serve as reinforcement for the behavior

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Practical Implications:

Making program changes based on FA:

(adapted from Carbone Clinic)

Antecedent Manipulation
(stimulus control/motivation)

Increase pairing
Reduce # of demands (VR)
Increase # of easy skills interspersed
Decrease response effort
Further reduce errors (modify prompt procedures)
Change instruction pace (ITI)
Decrease/increase session time
Conduct Sr⁺ assessment
Change field of stimuli
Increase # of teaching trials
Change physical environment
Change aim
Teach pre-requisite skills
Decrease # of goals/objectives
Build MO by deprivation of specific reinforcers
Change teaching procedure
Other:

Consequence Manipulation
(reinforcer/extinction/punishment)

- Provide more valuable reinforcer
- Provide higher rate of reinforcement (lower VR)
- Reinforce immediately
- Provide greater magnitude of reinforcement
- Reinforce on transfer trials
- Better use of extinction
- Improve implementation of differential reinforcement
- Other:

The Behavior Support Plan:
3 Critical Components of Intervention

1. MO: reduce motivation to engage in problem behavior
2. Teach competing skill within functional response class (manding v. problem behavior)
3. Extinction: problem behavior does contact reinforcer (must consider safety issues)

A plan for each function

- PBSP should be function specific
- The same behavior may require separate plans for each function
- Avoid "shotgun" approaches to intervention

Training Staff:
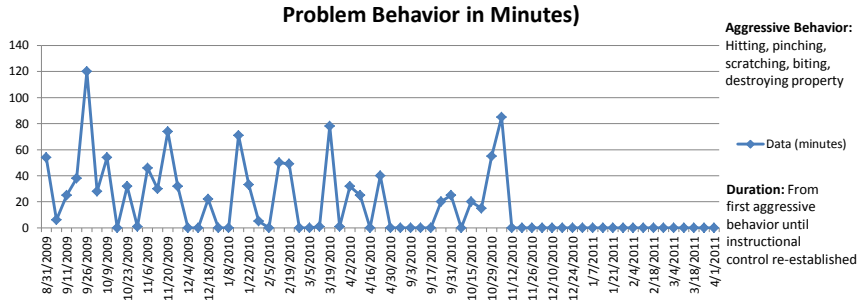## Behavior Management and Discipline

- Teach staff to "catch them being good"
- Teach staff to maintain and review data daily
- Teach staff to remain calm in all situations
- Teach staff "hands off" methods of discipline
- Establish a focus on teaching appropriate behavior rather than reacting to problem behavior
- Establish a focus on keeping students meaningfully engaged
- Establish an environment wherein teachers support one another: they come to each others' assistance when needed
- Have emergency plans and procedures established in advance so staff know how to respond when crisis do arise
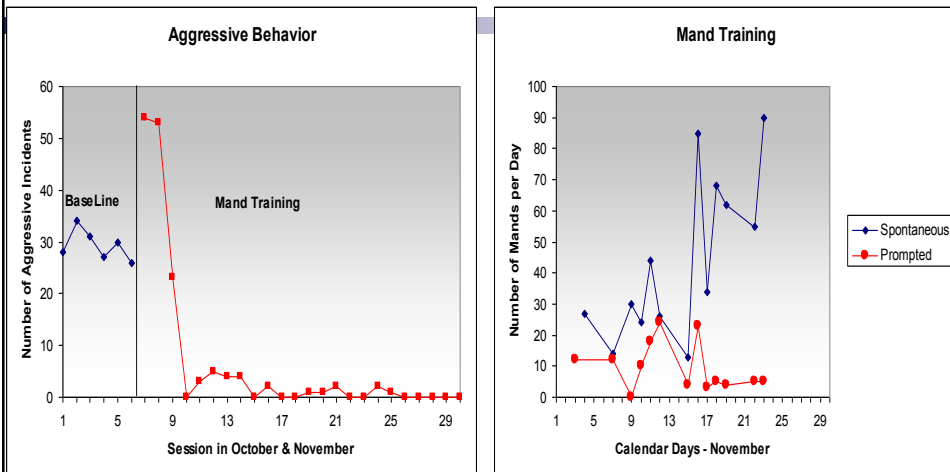
Considerations in Evaluating Interventions

- Is intervention being done correctly?
- Is intervention being done consistently?
- Is instruction (concepts/stimuli) arranged faultlessly? clear examples/non-examples across irrelevant variables
- Is intervention being done often enough?
- Is data accurate?
- Is enough time allotted to do the intervention?
- Are interventions procedures clearly stated?
- Are staff able to adjust prompt level and reinforcement on a moment to moment basis?
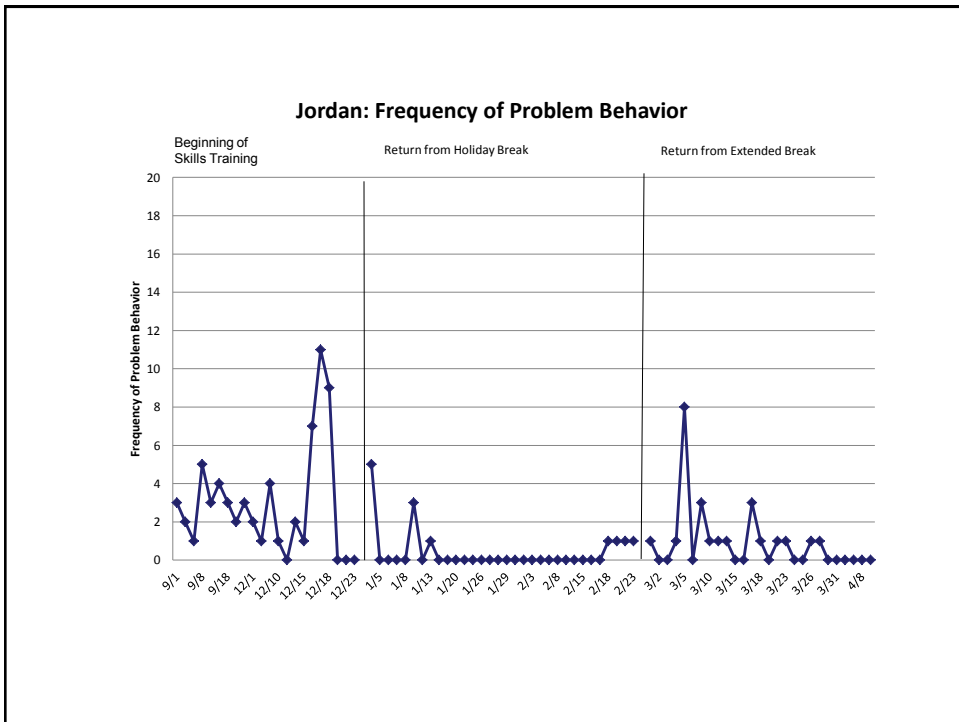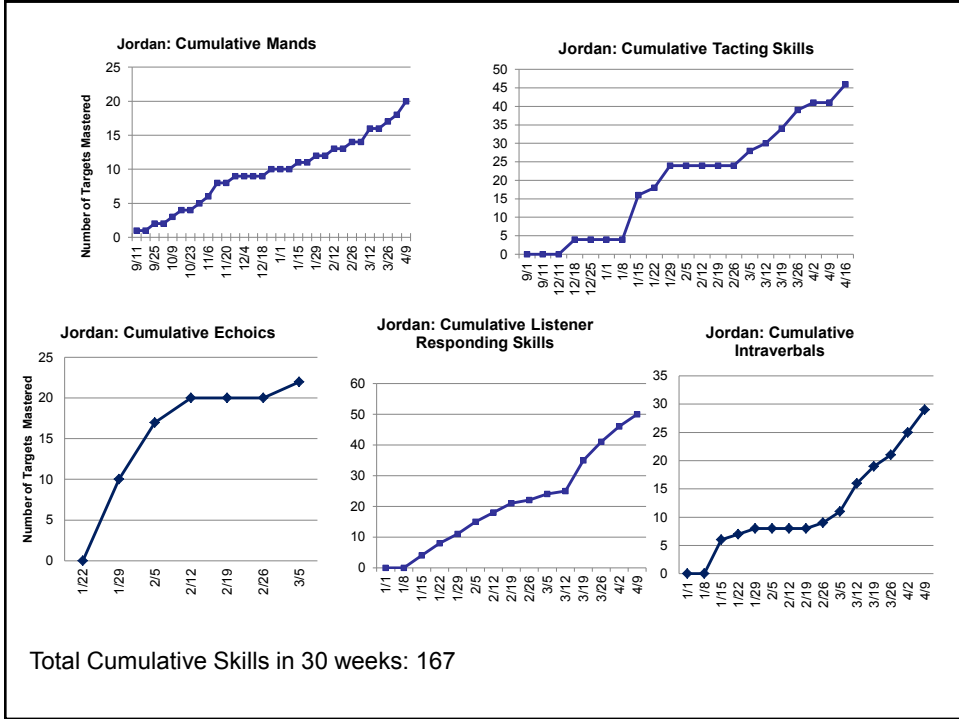
Student A
Intervention: Instruction and Mand Training

Problem Behavior in Minutes)

Aggressive Behavior: Hitting, pinching, scratching, biting, destroying property

Data (minutes)

Duration: From first aggressive behavior until instructional control re-established

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The Relation Between Positive Behavioral Intervention and Reduction of Aggression

Aggressive Behavior

BaseLine

Mand Training

Number of Aggressive Incidents

Session in October & November

Mand Training

Number of Mands per Day

Calendar Days - November

Spontaneous
Prompted

Jordan: Cumulative Mands

Jordan: Cumulative Tacting Skills

Jordan: Cumulative Echoics

Jordan: Cumulative Listener Responding Skills

Jordan: Cumulative Intraverbals

Total Cumulative Skills in 30 weeks: 167

Jordan: Frequency of Problem Behavior

"Increasing the effectiveness of instruction results in less failure, more frequent social and other forms of reinforcement, and general improvements in the demand situation to the point where it may not be functioning as a demand, but rather as an opportunity"

Jack Michael

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