HEALTH AND SAFETY PROGRAMS: ABA PROCEDURES AND OUTCOMES

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Monday: 1-4 pm room 105
Tuesday: 9-12 pm room 107

WHY HEALTH & SAFETY

- 25 year old female who had not received dental care since early childhood
- 3 year old female who only consumed 2 foods, both of which are not healthy
- 11 year old male never had dental care
- 7 year old male with ear problems and requires surgery who will not tolerate ear exam
- 12 year old male, who needs frequent blood draws, will not tolerate said draws and has to be restrained
- 6 year old male diagnosed with autism drowned last weekend in Seminole County

HEALTH & SAFETY GRANT 2016-2017

Funded By: West Orange Healthcare District

Project Manager: Joy Bennett, MS, BCBA

WEST ORANGE HEALTHCARE DISTRICT

OUTCOMES MANAGEMENT

- Develop proposal with outcomes
  - Targets
  - Measurement
  - Benchmarks
  - Setup data collection and procedures
- Upon grant award, implement
- Monthly review of outcomes – make adjustments
  - Clinical data
  - Hours tracking
- Quarterly reports to funder
- Final report to funder

PROJECTED OUTCOMES

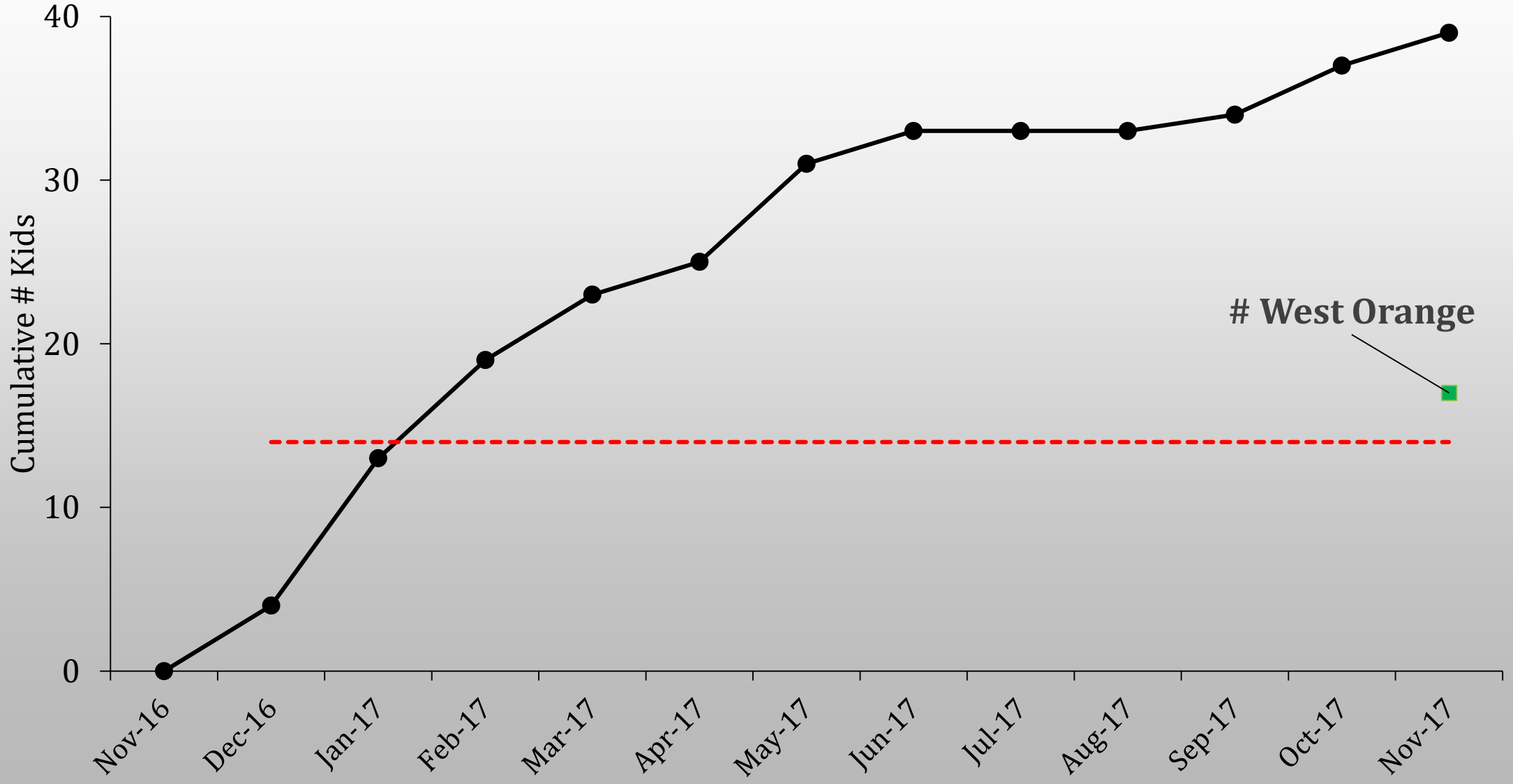
- Serve >= 14 kids
- Complete >= 25 projects related to health & safety
- Of the >= 25 projects, >= 90% mastered in the community

RESULTS: GRANT PROJECT TARGETS

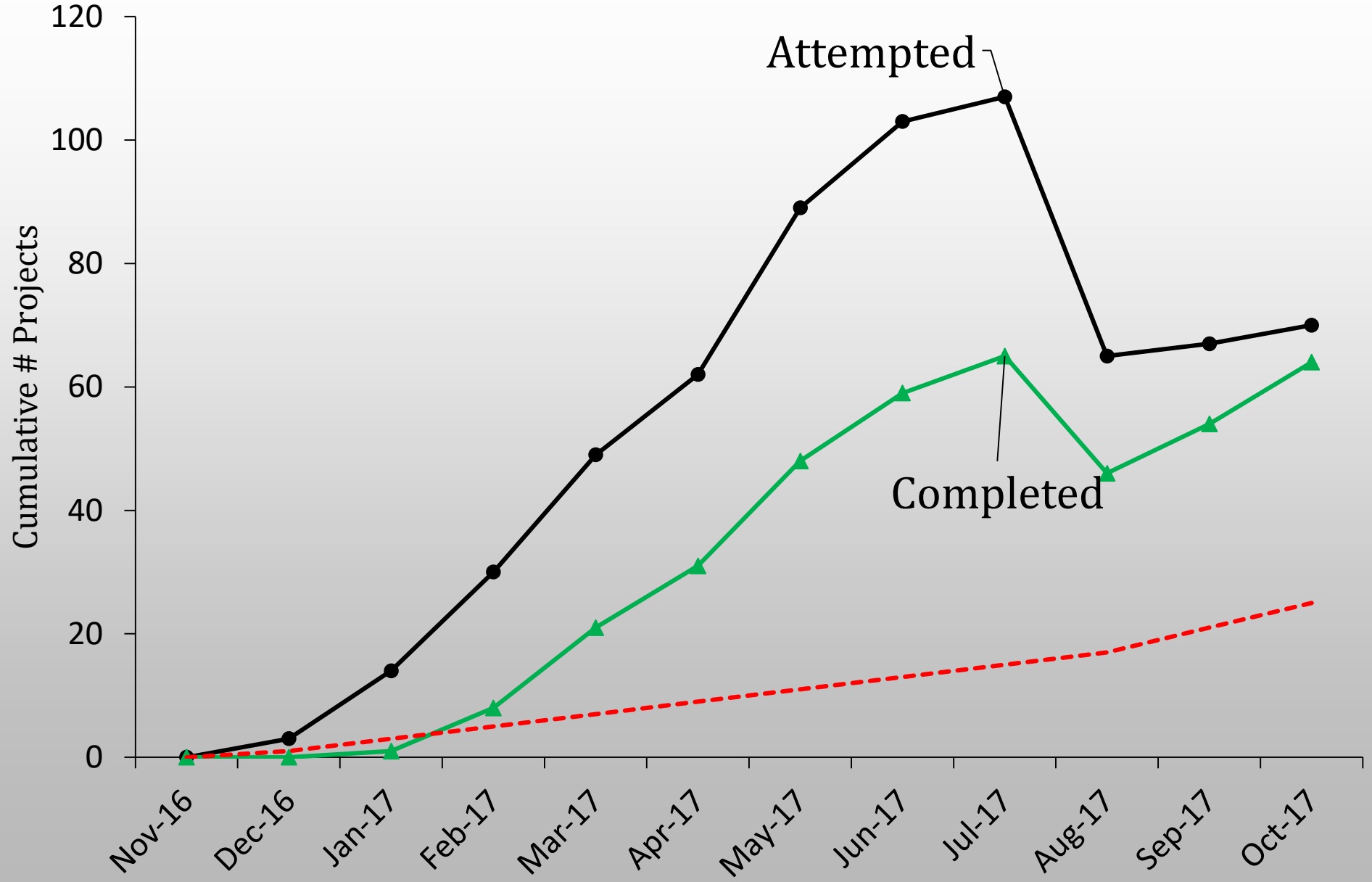
- Taking pills
- Dental exams
- Medical exams
- Vision exams
- Hair cutting
- Food acceptance
- Blood draws

- Tooth brushing
- Wearing bandaid
- Wearing clothes
- Crossing streets

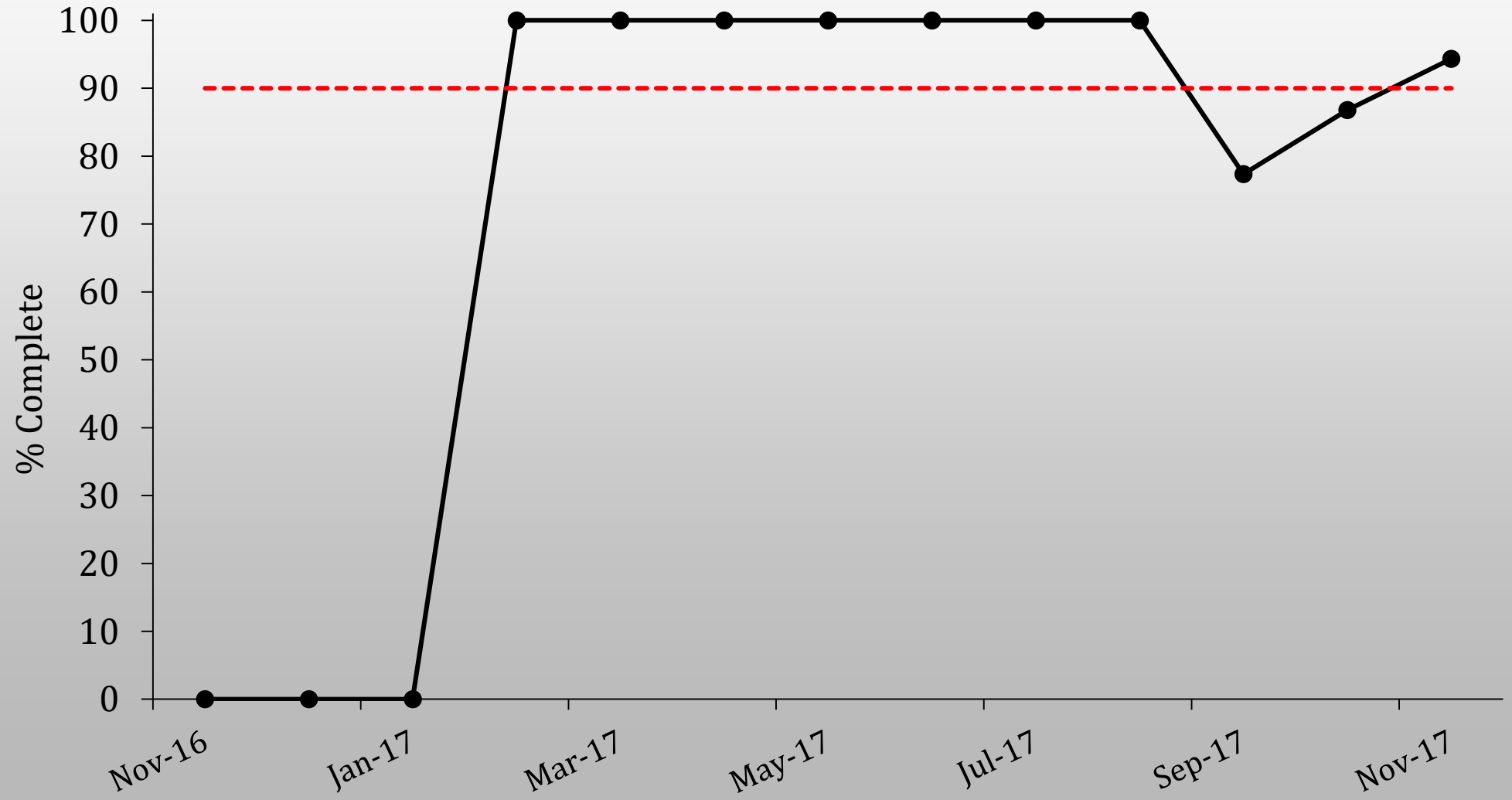
RESULTS: # OF KIDS SERVED



RESULTS: # PROJECTS



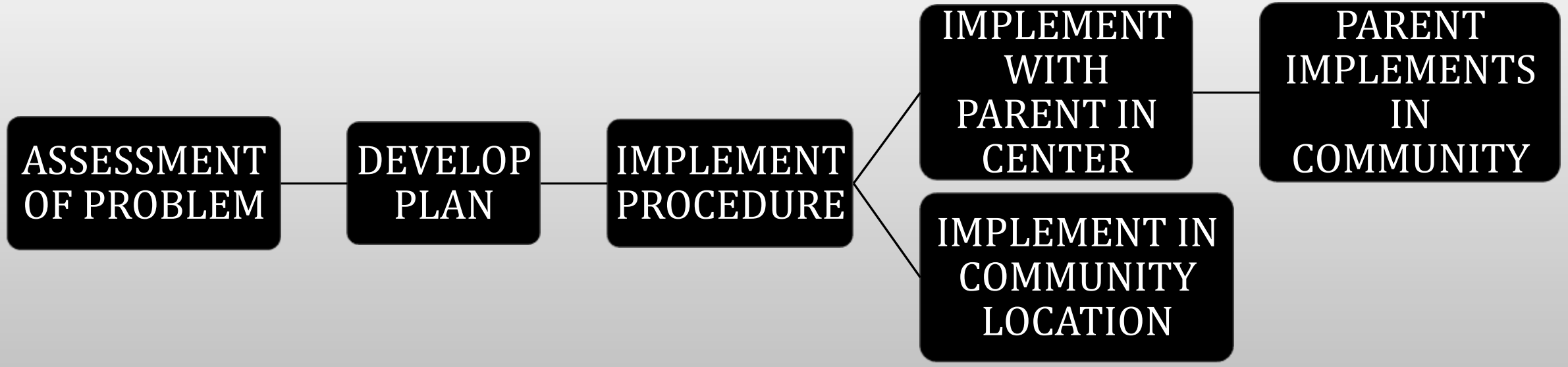
RESULTS: COMPLETED IN TARGET SETTING



GRANT HOURS TRACKING

Excel Tracker

GENERAL PROCEDURES



SPECIFIC PROCEDURES: Escape/Avoidance Hierarchy with H&S-Related Projects

TX OPTIONS

Drugs: (e.g., anti-anxiety)

- Efficacy?
- Side effects

General anesthesia:

- Effective
- Risk events (death is rare, but 1:100,000)
- Expensive

TX OPTIONS

Power through these activities

- Emotional behavior
- Risk events
- Often involves restraints

TX OPTIONS

Contracting

- Can be effective
- Long sequences?

Behavior Contract

Date: _____

I promise to work on these behavior expectations: _____

Choose 3 of the following or create your own.

- I will avoid whining
- I will go to bed when asked
- I will complete my homework on time
- I will use good manners
- I will not interrupt
- I will not hit
- I will respect the property and privacy of others
- I will be sensitive to the feelings of others
- I will get ready for school on time
- I will avoid places and objects that are unsafe or dangerous
- I will present a positive attitude instead of being negative, pessimistic or rude
- I will take responsibility for my actions and not blame others
- I will pick up after myself
- I will not tattle
- I will keep good hygiene
- I will eat healthy foods
- I will do my chores
- I will _____
- I will _____
- I will _____

Reward for meeting these expectations: _____

Consequence for not meeting these expectations: _____

Child Signature: _____ Date: _____

Parent Signature: _____ Date: _____

KidPointz

GRADUAL INTRODUCTION OF STIMULI

<u>People With Phobias</u>

- Use hierarchies of feared stimuli
  - Least frightening → Most frightening
- Learn relaxation skills
- Apply to hierarchy of feared stimuli

TX OPTIONS

Hierarchy Example

- Sight of picture of a snake
- Sight of snake at 20 ft distance
- Sight of snake at 10 ft distance
- Sight of snake at 5 ft distance
- Sight of snake at 1 ft distance
- Touch snake for 1 sec
- Touch snake for 5 sec
- Touch snake for 10 sec and so on until…

TX PROCEDURES

Teach Participant to Relax then…

- Sight of picture of a snake + relaxation
- Sight of snake at 20 ft distance + relaxation
- Sight of snake at 10 ft distance + relaxation
- Sight of snake at 5 ft distance + relaxation
- Sight of snake at 1 ft distance + relaxation
- Touch snake for 1 sec + relaxation
- Touch snake for 5 sec + relaxation
- Touch snake for 10 sec + relaxation etc

APPLICATIONS TO HEALTH & SAFETY

Social Validity of the Hierarchy:
What are the essential steps?

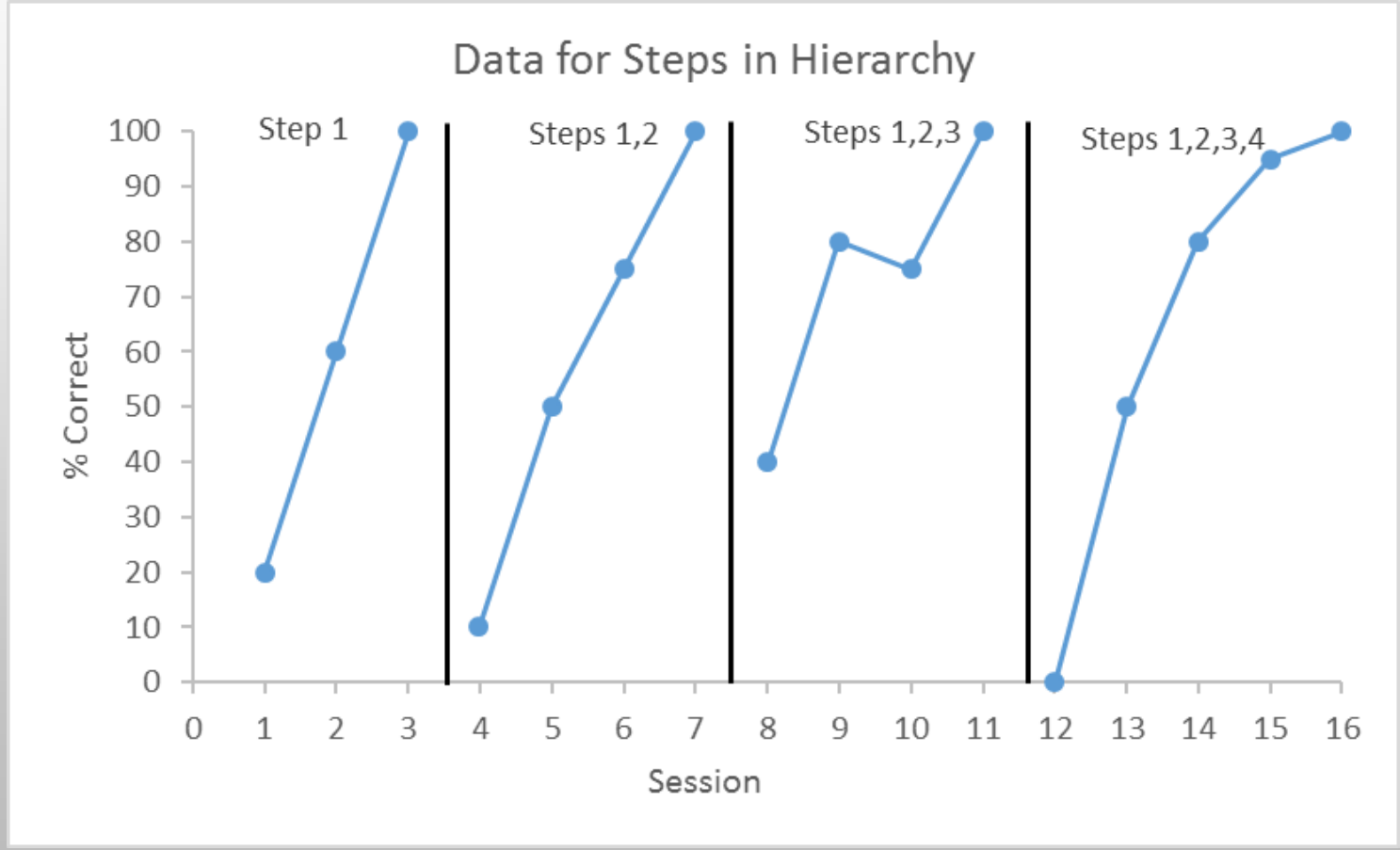
- Interview provider of services
- Interview others who have successful experience
- Go through the experience
  - Such as…Taking a pill…
- Then develop steps and sub-steps

PROCEDURE HIGHLIGHTS

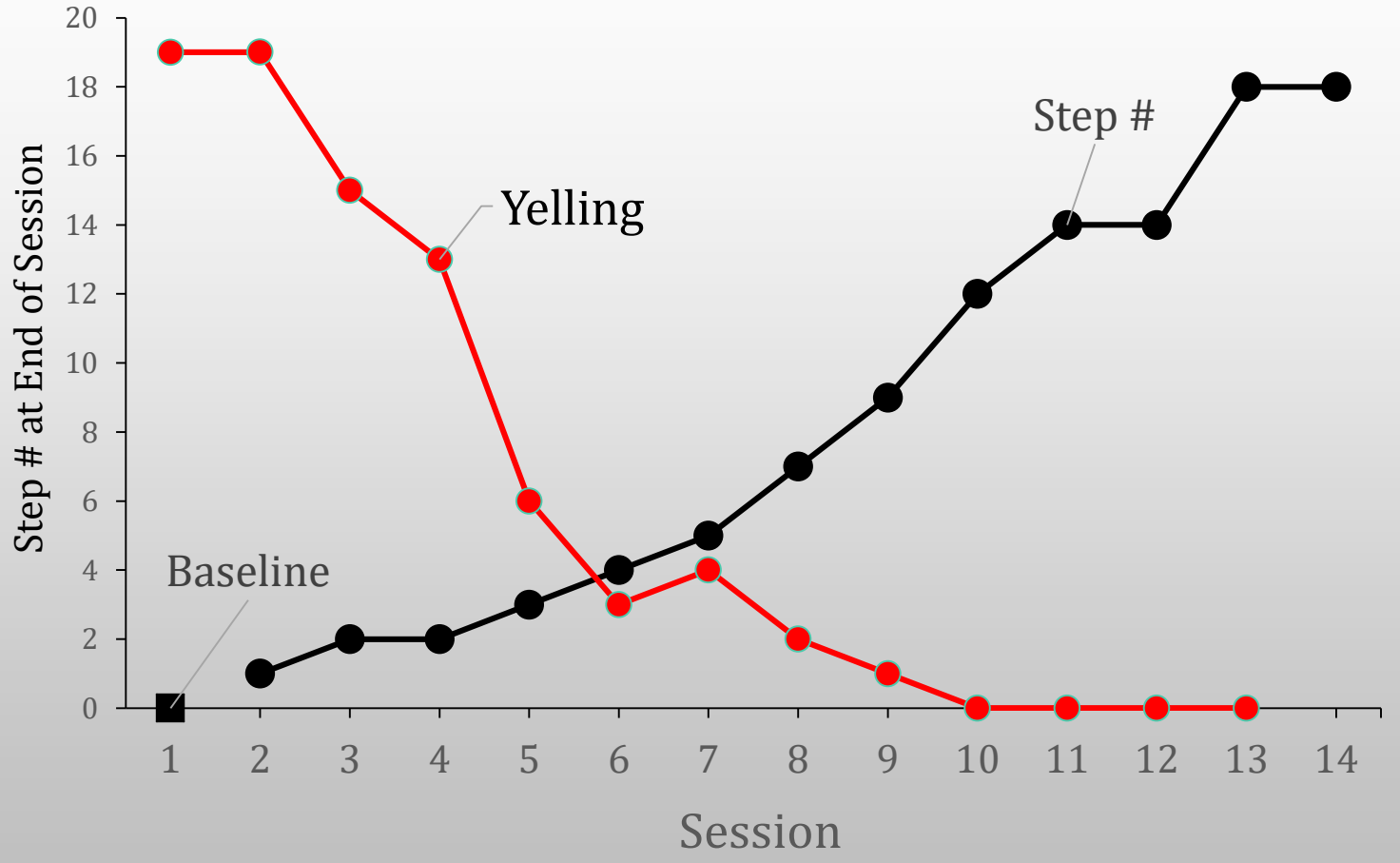
Break down task into small steps

1. Tolerate empty capsule within 1 ft
2. Tolerate empty capsule within 6”
3. Tolerate empty capsule touching lip
4. Accept ½ empty capsule into mouth for 2”
5. Accept ½ empty capsule into mouth for 5”
6. Swallow ½ empty capsule into mouth with chaser
7. Swallow whole empty capsule into mouth with chaser

DATA DISPLAY



DATA DISPLAY



PROCEDURES

- Potential Reinforcers:
  - Escape from hierarchy
  - Transition to previous step
  - Contingent breaks with preferred items
- Prompts as needed
- High probability request sequence prior to introducing step
- Modeling steps

PROCEDURES

- Teach request escape
  - Perhaps use differential reinforcement
    - More reinforcers for completing hierarchy vs reinforcer for mand
- Extinction?
  - Escape extinction – prevent termination of the procedure contingent on problem behavior
  - Non-contingent escape
  - If escape for problem behavior is inevitable…

PROCEDURES

Low intensity → High Intensity → Escape

VS

Low intensity → Escape

FOOD ACCEPTANCE

Case: Food refusal that may result in hospitalization

Facts:

1. 3 year old female with history of food refusal
2. Some mands
3. Consumed food: cookies, M&Ms, Pediasure

FOOD ACCEPTANCE

1. Tx elements
   A. FR 1 for taking bite
   B. Escape extinction – keep food in proximity until criterion met
   C. Simultaneous presentation of preferred and non-preferred food
   D. Sequential presentation of… non-preferred → preferred food

FOOD ACCEPTANCE

1. Tx elements (contd)
   C. Hierarchy of food acceptance
      I. Show food
      II. Food on spoon
      III. Food w/in 6”
      IV. Spoon touches mouth
      V. Food in mouth
      VI. Swallow
   D. FR 1 escape for refusals: “All done” + push food away → Extinction

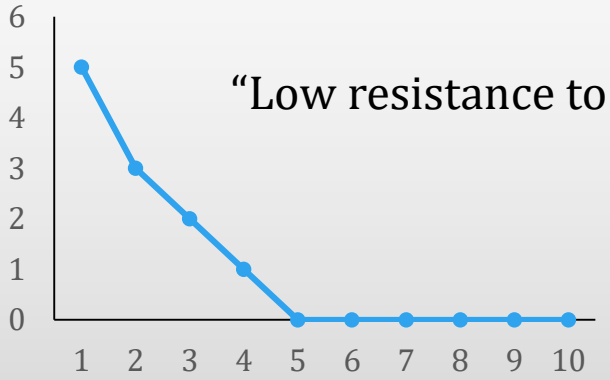
SCHEDULE EFFECTS AND EXTINCTION

- Preparing for Extinction
  - History of FR 1
  - Then…Extinction

VS

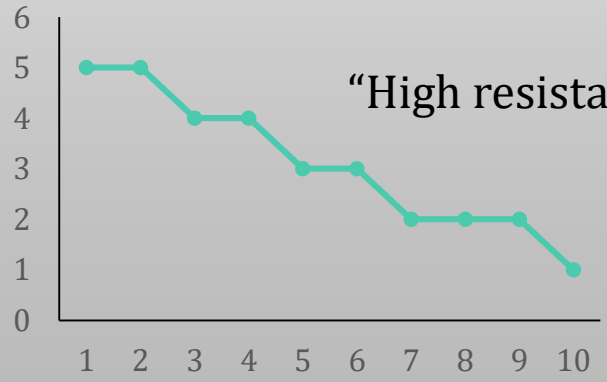
  - History of VR 5
  - Then…Extinction

Ext After FR 1 History



"Low resistance to extinction"

Ext After VR 5 History



"High resistance to extinction"

VIDEOS

Food acceptance

BLOOD DRAW

Case:

1. 12 year old male who would participate in some medical procedures
2. Major procedures (e.g., blood work) done under anesthesia
3. Because of new meds, weekly blood draws scheduled, which required 5 person restraint

PROCEDURES

1. Contracting
2. Checklist of tasks each day
3. Weekly blood draws with restraints as needed
4. Blood draw training with hierarchy

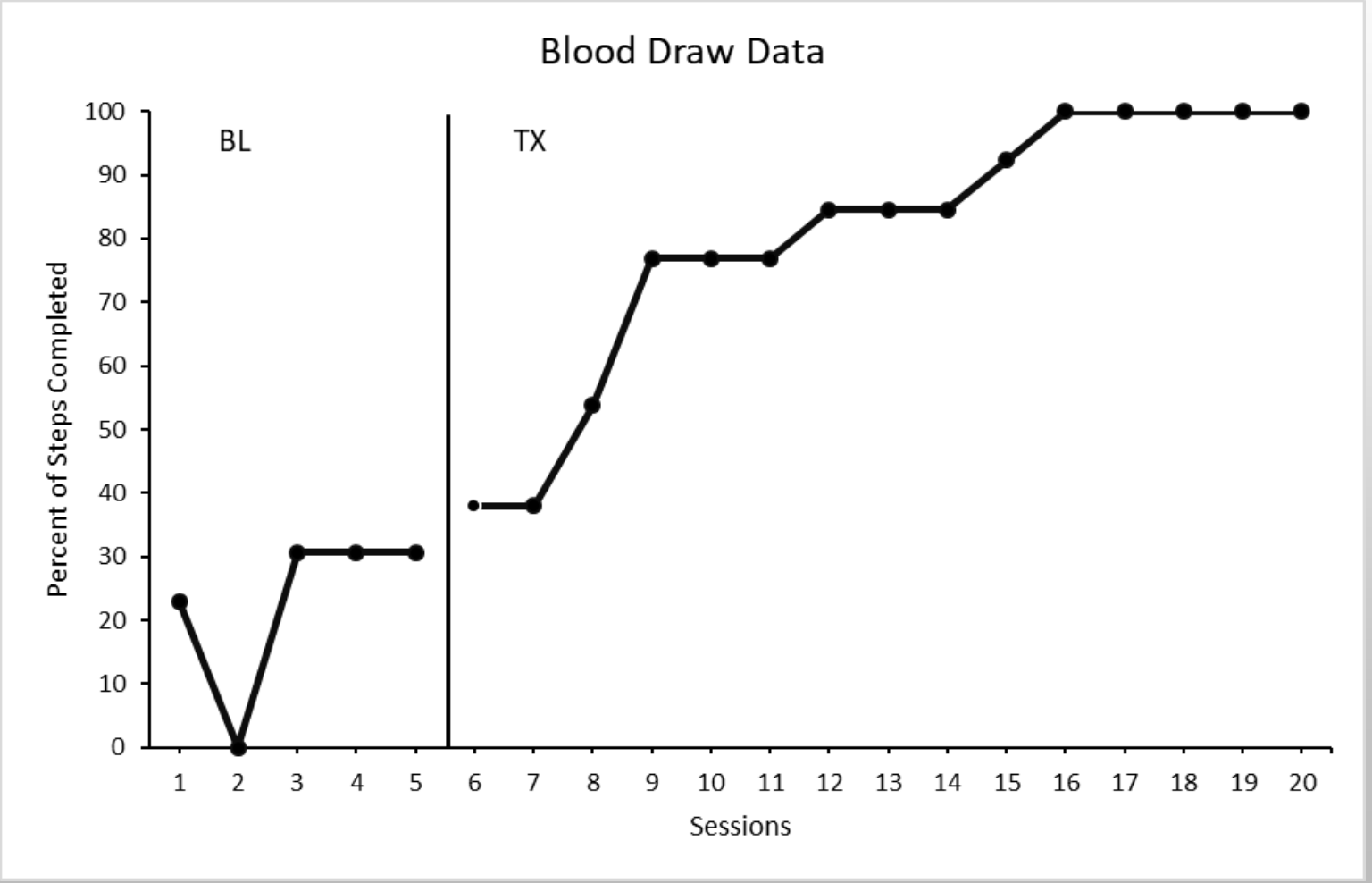
HIERARCHY

1. Sits in chair with arms
2. Puts arm facing up on arm of chair
3. Tolerates tourniquet on upper arm
4. Tolerates alcohol wipe on skin
5. Tolerates "needle" on vein for 1 s count
6. Tolerates "needle" on vein for 5 s count
7. Tolerates "needle" on vein for 10 s count
8. Tolerates "needle" on vein for 15 s count
9. Tolerates "needle" on vein for 20 s count
10. Tolerates "needle" on vein for 30 s count
11. Tolerates "needle" on vein for 30 s (no count)
12. Tolerates "needle" on vein for 45 s (no count)
13. Tolerates "needle" on vein for 1 m (no count)
14. Tolerates Band-Aid on vein 1.5 m

VIDEOS

Blood draw

HIERARCHY OF STEPS



TERMINOLOGY NOTE

- Desensitization
- Shaping
- Fading
- Chaining
- Gradual Exposure
- Escape/avoidance Hierarchy
- “The” Hierarchy

RESPONSE CLASSES

Operant: Escape from medical procedures

- Crying
- Elopement
- Hitting
- Pinching

Reinforcer

Escape from medical procedures

RESPONSE CLASSES

Operant: Escape from medical procedures

- Crying
- Elopement
- Hitting
- Pinching

Reinforcer

Escape from medical procedures

During Training

Compliance

RESPONSE CLASSES

Operant: Escape from medical procedures

- Crying
- Elopement
- Hitting
- Pinching
- Compliance

Reinforcer

Escape from medical procedures

Sprague & Horner, 1992; Shukula-Mehta & Albin, 2005

COMMUNITY PARTNERS

- West Orange Healthcare District
- Florida Institute of Technology
- Rollins College
- Nemours Childrens Hospital

QUEST SWIMS

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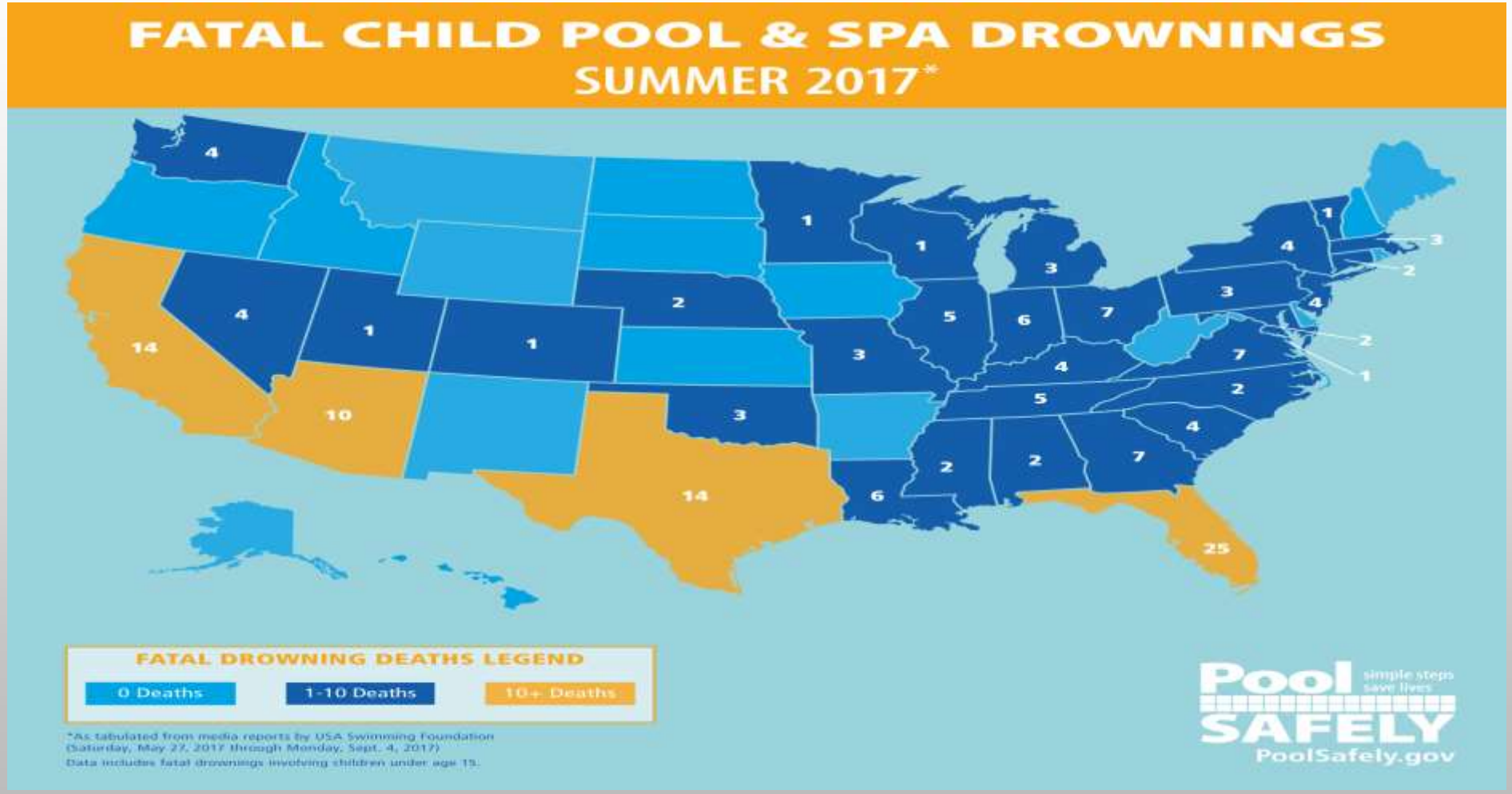
WHY SWIMMING PROGRAMS?

- A 7 year old runs away from home to neighbors pool
- A family is moving to a property with a pond and daughter cannot swim

UNINTENTIONAL DROWNING: HOW BIG IS THE PROBLEM?



DROWNING IN PERSONS DIAGNOSED WITH ASD

- RESEARCH INDICATES THAT CHILDREN WITH AUTISM SPECTRUM DISORDER (ASD) ARE AT A HIGHER RISK OF DROWNING THAN THOSE IN THE GENERAL POPULATION (SHAVELLE, STRAUSS & PICKETT, 2001).

CHARACTERISTICS AFFECTING WATER SAFETY

- COMMUNICATION
  - DEFICITS IN RECEPTIVE AND/EXPRESSIVE LANGUAGE
- PHYSICAL
  - PERSONS DIAGNOSED WITH ASD ARE MORE LIKELY TO HAVE MOTOR IMPAIRMENTS THAN TYPICALLY DEVELOPING INDIVIDUALS (FOURNIER, HASS, NAIK, LODHA, & CAURAUGH, 2010).
- SEIZURES
  - EPILEPSY IS MORE COMMON IN PEOPLE WITH ASD THAN IN THE GENERAL POPULATION (DANIELSSON, GILLBERG, BILLSTEDT, GILLBERY, & OLSSON, 2005).
- ELOPEMENT
  - IN A STUDY OF OVER 800 PARENTS, AROUND 50% OF CHILDREN WITH ASD BETWEEN 4-10 WANDER AT SOME POINT (ARKY, 2011).
- BEHAVIORAL
  - PROBLEM BEHAVIORS RELATED TO ESCAPE FROM AVERSIVE SITUATIONS (E.G., WATER ON FACE, INSTRUCTIONS, ETC.)
  - BEHAVIORS MAINTAINED BY AUTOMATIC REINFORCEMENT (E.G., WATER IN THE MOUTH)

DID YOU KNOW?

10 YEARS OF PROGRESS • A LIFETIME OF HOPE •
AUTISM SPEAKS

Nearly 50% of people with autism wander or elope from safety.

Water safety education is crucial to keeping our community safe!

90% of wandering fatalities are caused by accidental drowning.

SWIMMING LESSONS MAY REDUCE RISK OF DROWNING

- FOR CHILDREN AGES 1-4, EXPOSURE TO FORMAL SWIMMING LESSONS WAS ASSOCIATED WITH AN 88% REDUCTION IN THE RISK OF DROWNING WITH CHILDREN. IN CHILDREN AGES 5-19, IT WAS ASSOCIATED WITH A 64% REDUCTION IN RISK OF DROWNING (MCINTOSH, 2009).

HEALTH CONCERNS

- RESEARCH SUGGESTS THAT CHILDREN DIAGNOSED WITH ASD HAVE A TENDENCY FOR A LESS ACTIVE LIFESTYLE (ALEKSANDROVIC, JORGIC, BLOCK, & JOVANOVIC 2015).
- OVER 30 PERCENT OF CHILDREN DIAGNOSED WITH ASD ARE REPORTED AS OBESE (CURTIN ET AL. 2010).

RATIONALE FOR AQUATIC ABA

- EVIDENCE BASED
- PARENT PREFERENCE FOR INSTRUCTORS WITH EXPERIENCE WORKING WITH CHILDREN WITH DEVELOPMENTAL DISABILITIES
- CAN WORK ON BARRIERS AS WELL AS ACQUISITION
- TREATMENT OF PHOBIC BEHAVIOR

EVIDENCE: THE EFFECTS OF A BEHAVIORAL TREATMENT PACKAGE ON THE ACQUISITION OF AQUATIC SKILLS

- EXPLAIN THE EFFECTS OF A BEHAVIORAL TREATMENT PACKAGE ON THE AMERICAN RED CROSS LEARN-TO-SWIM LEVELS 1-2 CURRICULUM.

WHAT ARE THE EFFECTS OF A BEHAVIORAL TREATMENT PACKAGE ON THE AMERICAN RED CROSS LEARN-TO-SWIM LEVELS 1-2 CURRICULUM.

- METHOD:
  - PARTICIPANTS
    - PARTICIPANT 1, LUKE, IS A 7-YEAR OLD MALE
    - PARTICIPANT 2, HELEN, IS A 4 YEAR-OLD FEMALE
    - PARTICIPANT 3, NEIL, IS A 3 YEAR-OLD MALE
    - PARTICIPANT 4, TARA, IS A 3 YEAR-OLD FEMALE
  - SETTING:
    - ALL SESSIONS WERE CONDUCTED IN AN INDOOR POOL.

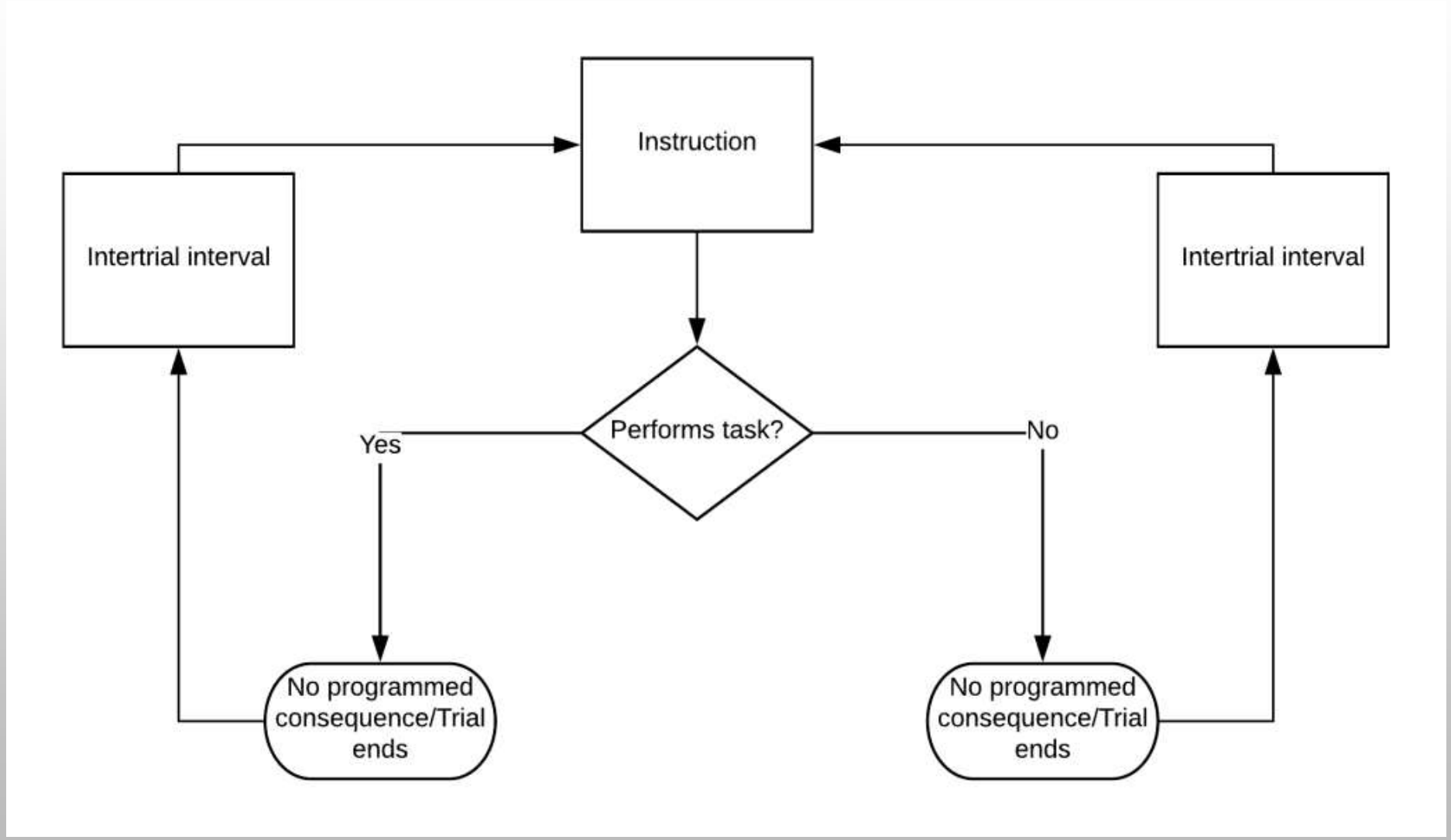
THE EFFECTS OF A BEHAVIORAL TREATMENT PACKAGE ON THE ACQUISITION OF AQUATIC SKILLS

- MATERIALS:
  - DATA SHEET
  - POOL NOODLE
  - POSSIBLE REINFORCERS
  - CAMERA
- SCREENING PROCEDURE FOR TARGET BEHAVIORS
  - AMERICAN RED CROSS LEARN-TO-SWIM LEVELS 1-2 CURRICULUM

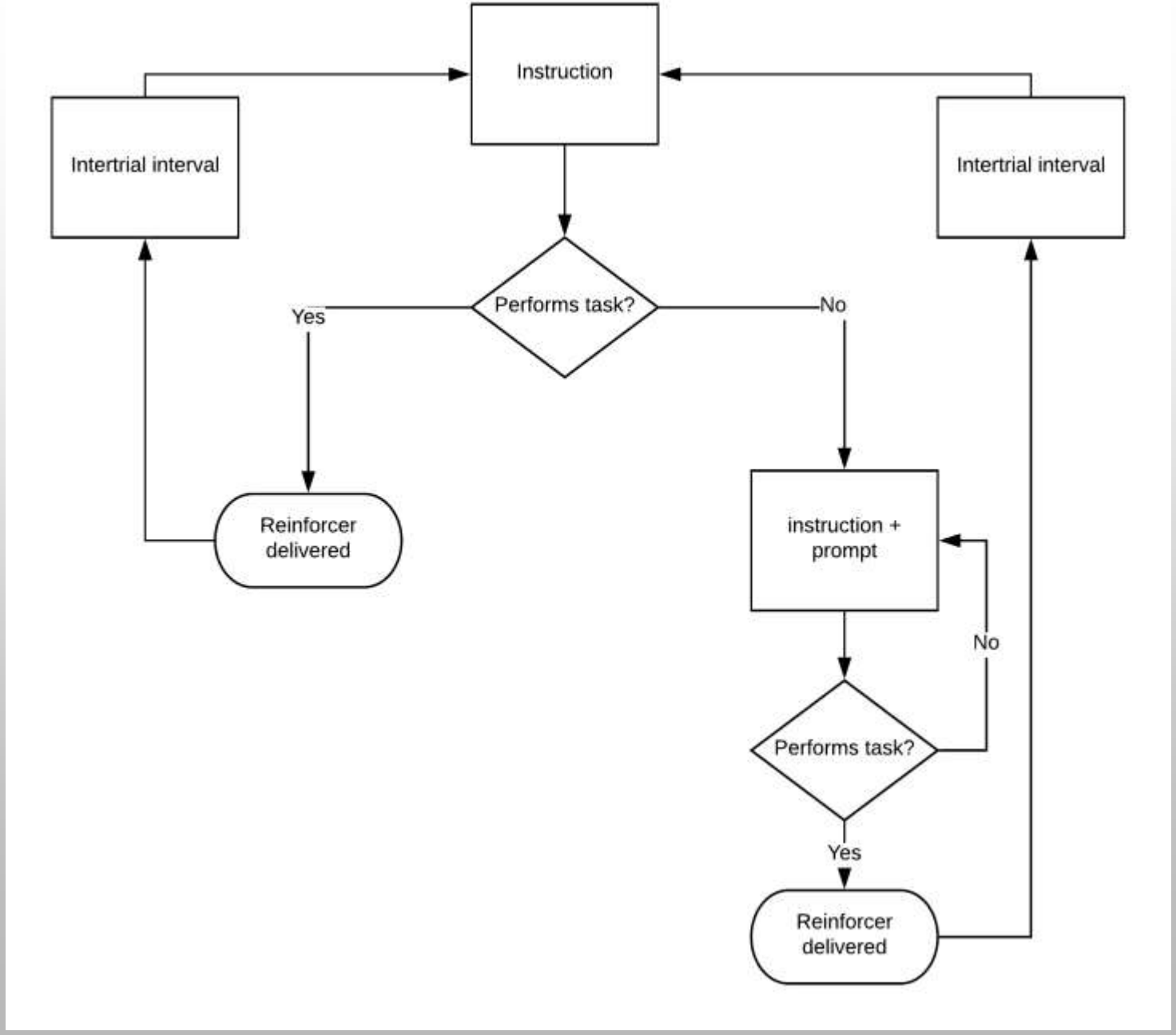
DEPENDENT VARIABLES:

- RESPOND TO VARIOUS INSTRUCTIONS
- RESPONSES ARE RED CROSS LEVEL 2 SKILLS

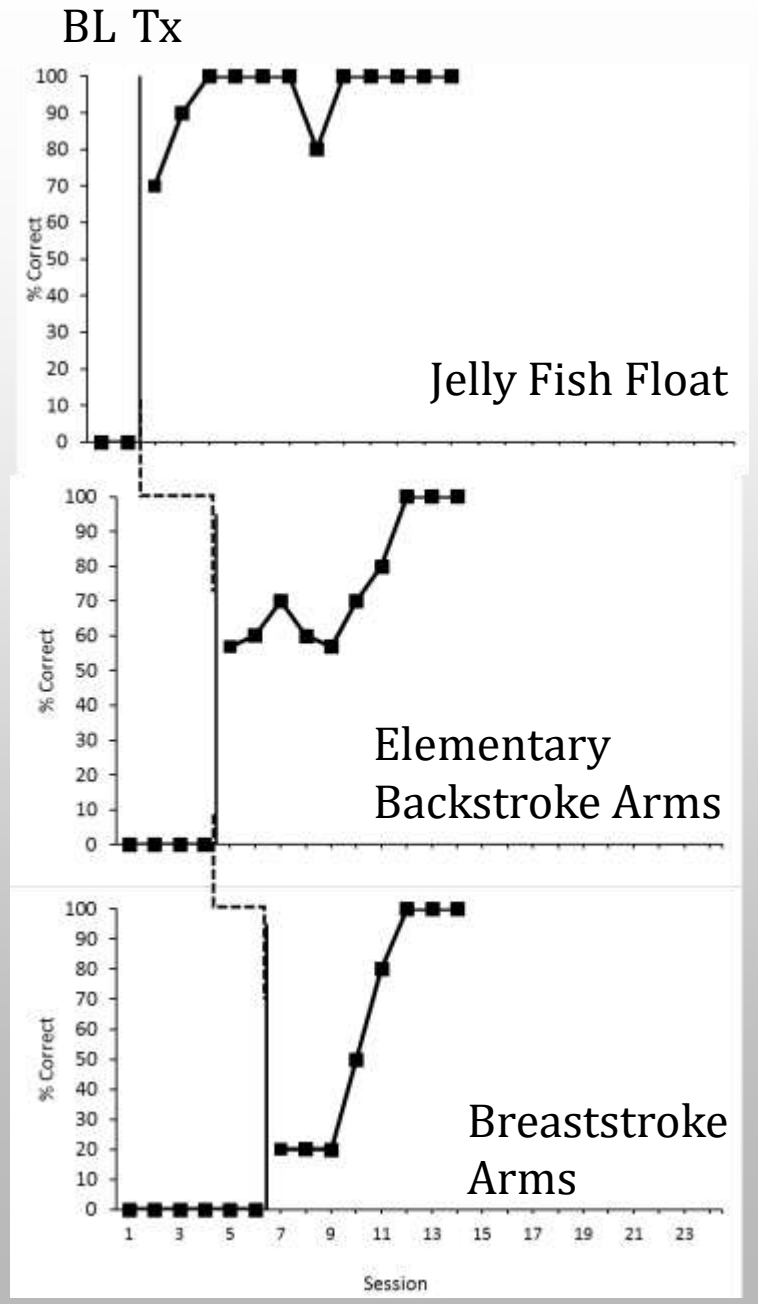
BASELINE


Instruction
Intertrial interval
Intertrial interval
Performs task?
Yes
No
No programmed consequence/Trial ends
No programmed consequence/Trial ends

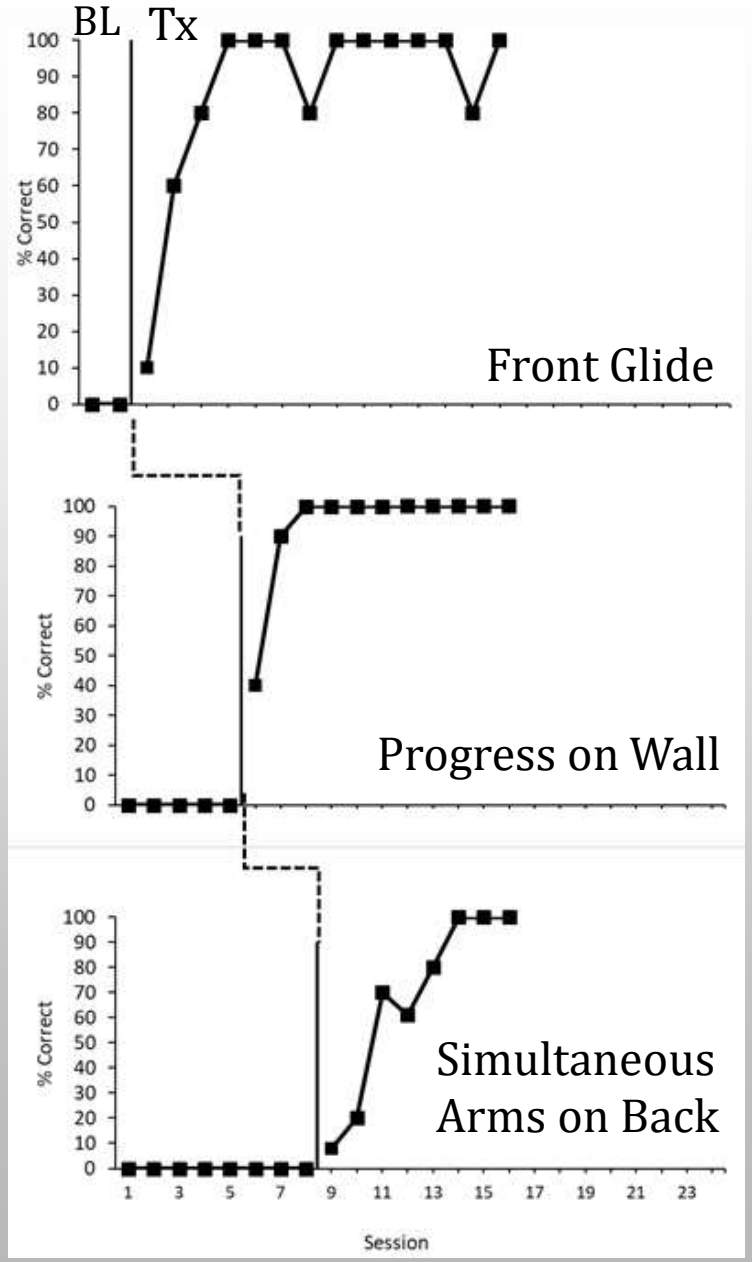
TREATMENT


Instruction
Intertrial interval
Intertrial interval
Performs task?
Yes
No
Reinforcer delivered
instruction + prompt
No
Performs task?
Yes
Reinforcer delivered

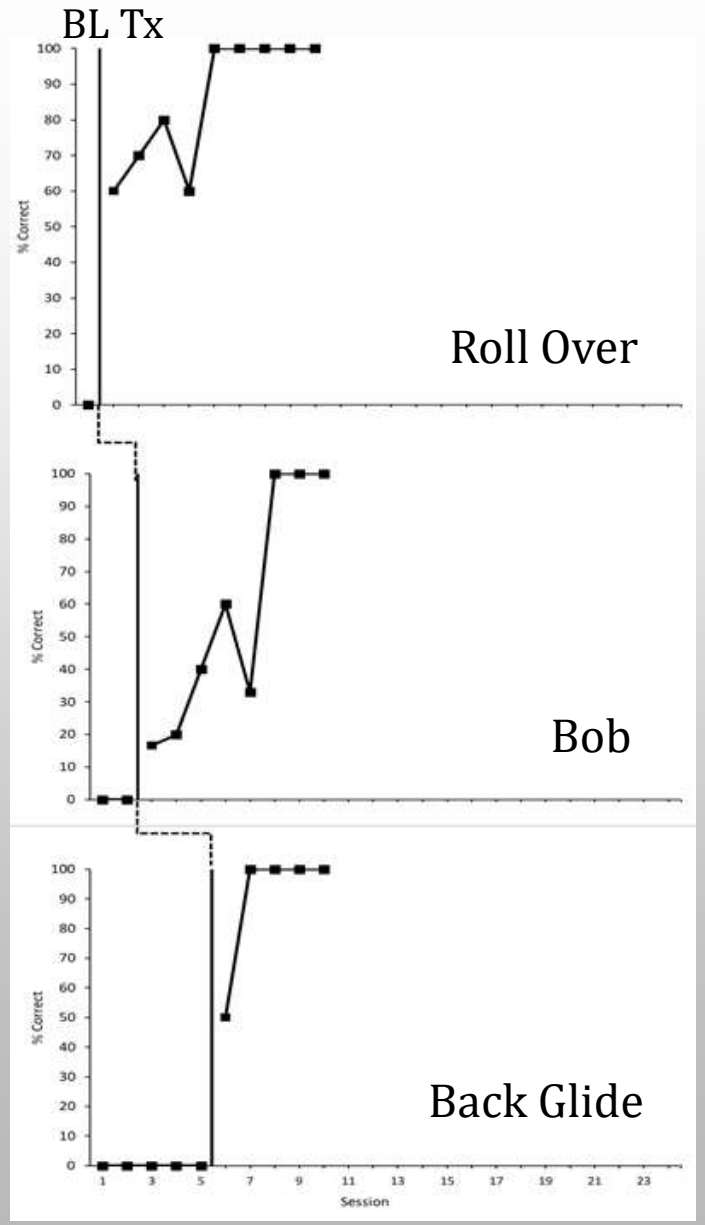
RESULTS: LUKE



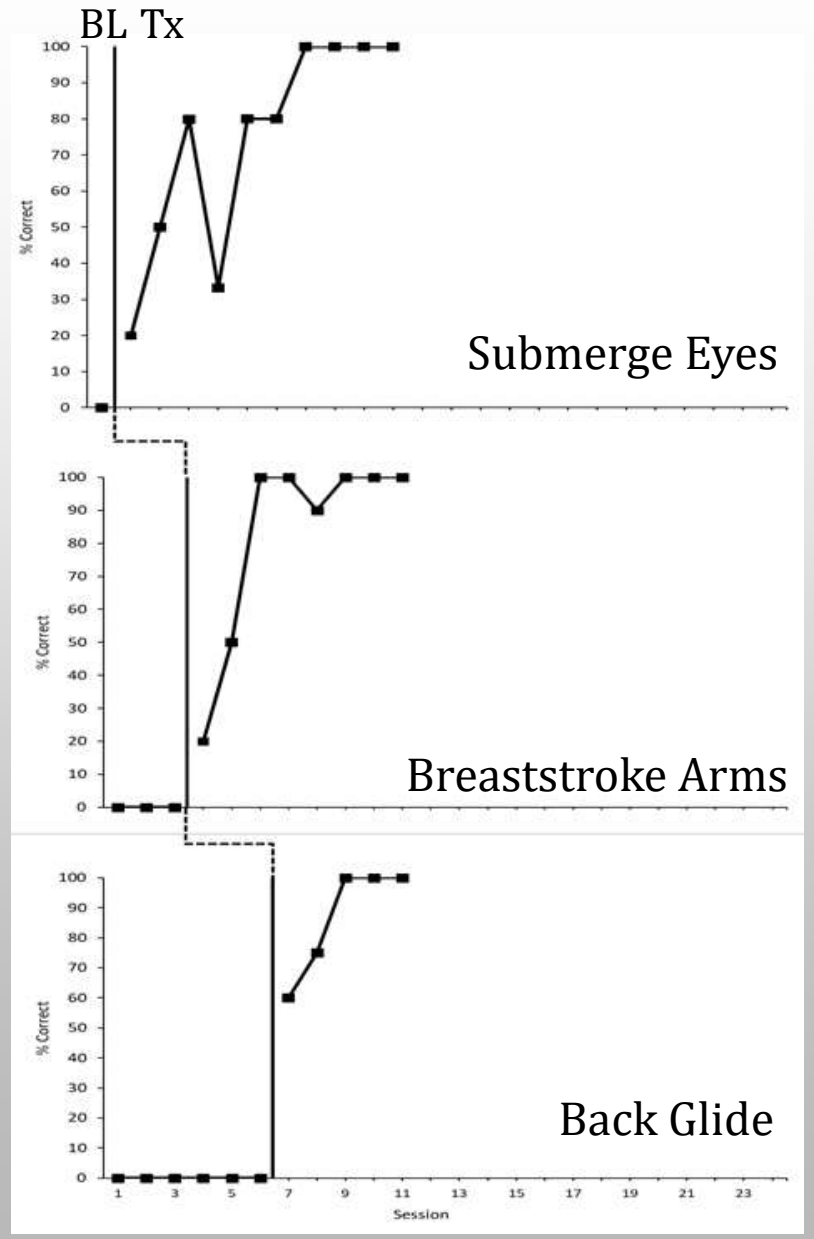
RESULTS: HELEN



RESULTS: NEIL



RESULTS: TARA



VIDEO

TARA VIDEO

IOA

- IOA WAS COLLECTED ACROSS PARTICIPANTS FOR A MINIMUM OF 30% OF SESSIONS.
- IOA WAS COMPUTED BY NUMBER OF AGREEMENTS/ TOTAL NUMBER OF TRAILS PER SESSION ACROSS SKILLS X 100
- IOA RANGED FROM 96.67%-100%

ULTIMATE TEST: CLOTHES ON TEST

- DRESS CHILD IN STREET CLOTHES
- PUT HIM/HER INTO WATER
- STAY CLOSE BUT OUTSIDE POOL
- OBSERVE IF CHILD MAKES IT TO SAFETY

HOW DOES THIS EXTEND CURRENT LITERATURE?

- ALL SKILLS WERE TAUGHT IN 10 DAYS OR UNDER WITHOUT PREREQUISITE TRAINING.
- THIS STUDY DISPLAYED EVIDENCE THAT A BEHAVIOR SKILLS PACKAGE IS EFFECTIVE IN TEACHING CHILDREN WITH AUTISM SWIMMING SKILLS AT DIFFERENT FUNCTIONING LEVELS.
- THE BEHAVIORAL SKILLS PACKAGE IS EFFECTIVE IN TEACHING A SWIMMING CURRICULUM (AMERICAN RED CROSS LEARN-TO-SWIM).
  - IN TOTAL WE TAUGHT 10 DIFFERENT SKILLS ACROSS PARTICIPANTS

FUTURE DIRECTIONS

- COMPONENT ANALYSIS
- COMPARISON BETWEEN RED CROSS SWIM LESSONS AND ABA SWIM LESSONS
- SWIMMING FOR EXERCISE
- BEHAVIORAL SKILLS TRAINING FOR WATER SAFETY INSTRUCTORS

CURRENT RESEARCH: WHAT ARE THE EFFECTS OF BEHAVIORAL SKILLS TRAINING ON A WATER SAFETY INSTRUCTOR'S BEHAVIOR?

- METHOD:
  - PARTICIPANT
    - KATIE, FEMALE, 22 YEARS OLD, 4 YEARS AS A WATER SAFETY INSTRUCTOR (WSI)
    - SETTING:
    - ALL SESSIONS CONDUCTED IN AN INDOOR POOL.

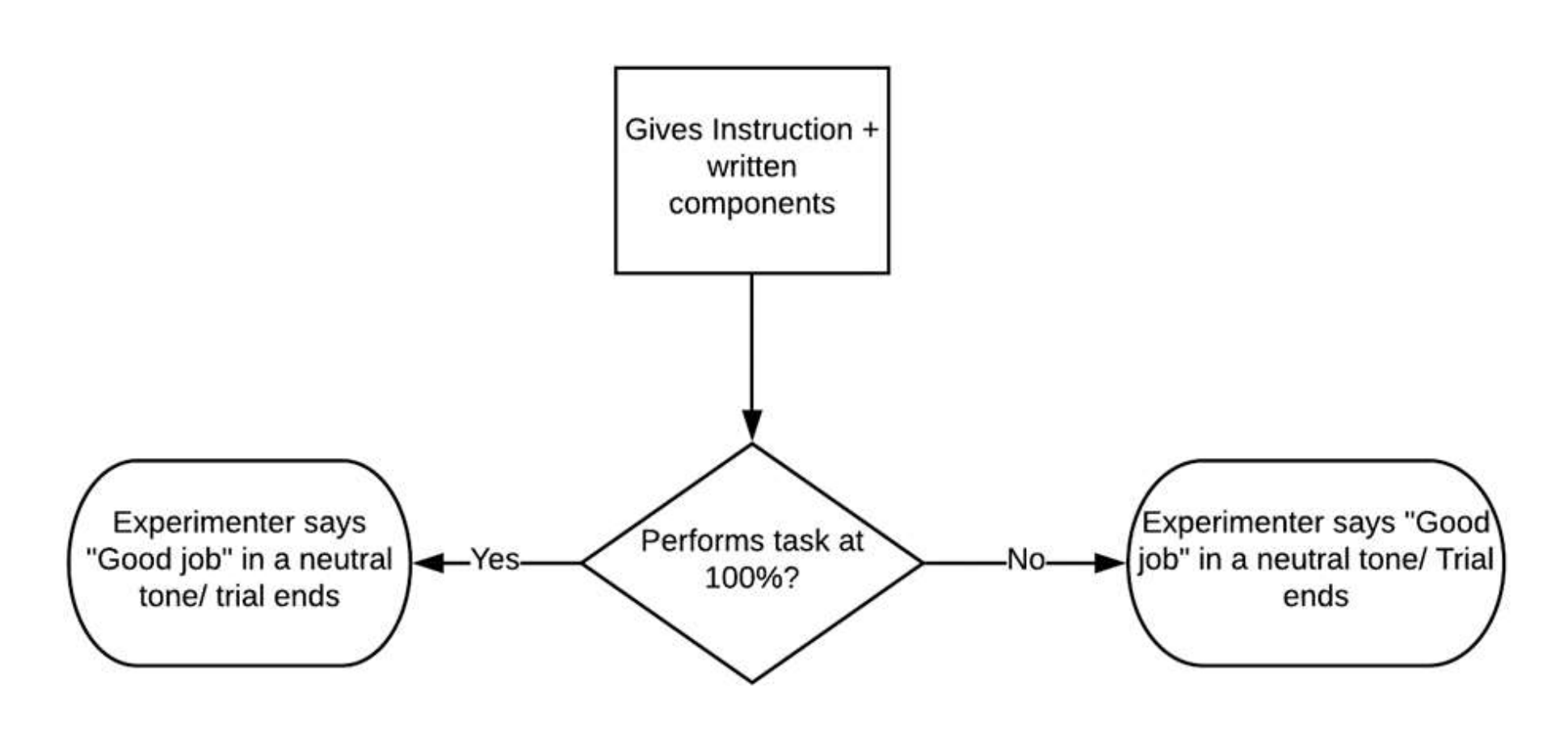
EFFECTS OF BEHAVIORAL SKILLS TRAINING ON A WATER SAFETY INSTRUCTOR'S BEHAVIOR?

- MATERIALS:
  - DATA SHEET
  - POOL NOODLE
  - POSSIBLE REINFORCERS
  - CAMERA
  - LAMINATED GRAPHS
- INSTRUCTIONS FOR TARGET BEHAVIORS
  - HOW TO CONDUCT DISCRETE TRIAL TRAINING
  - HOW TO ANALYZE GRAPHS

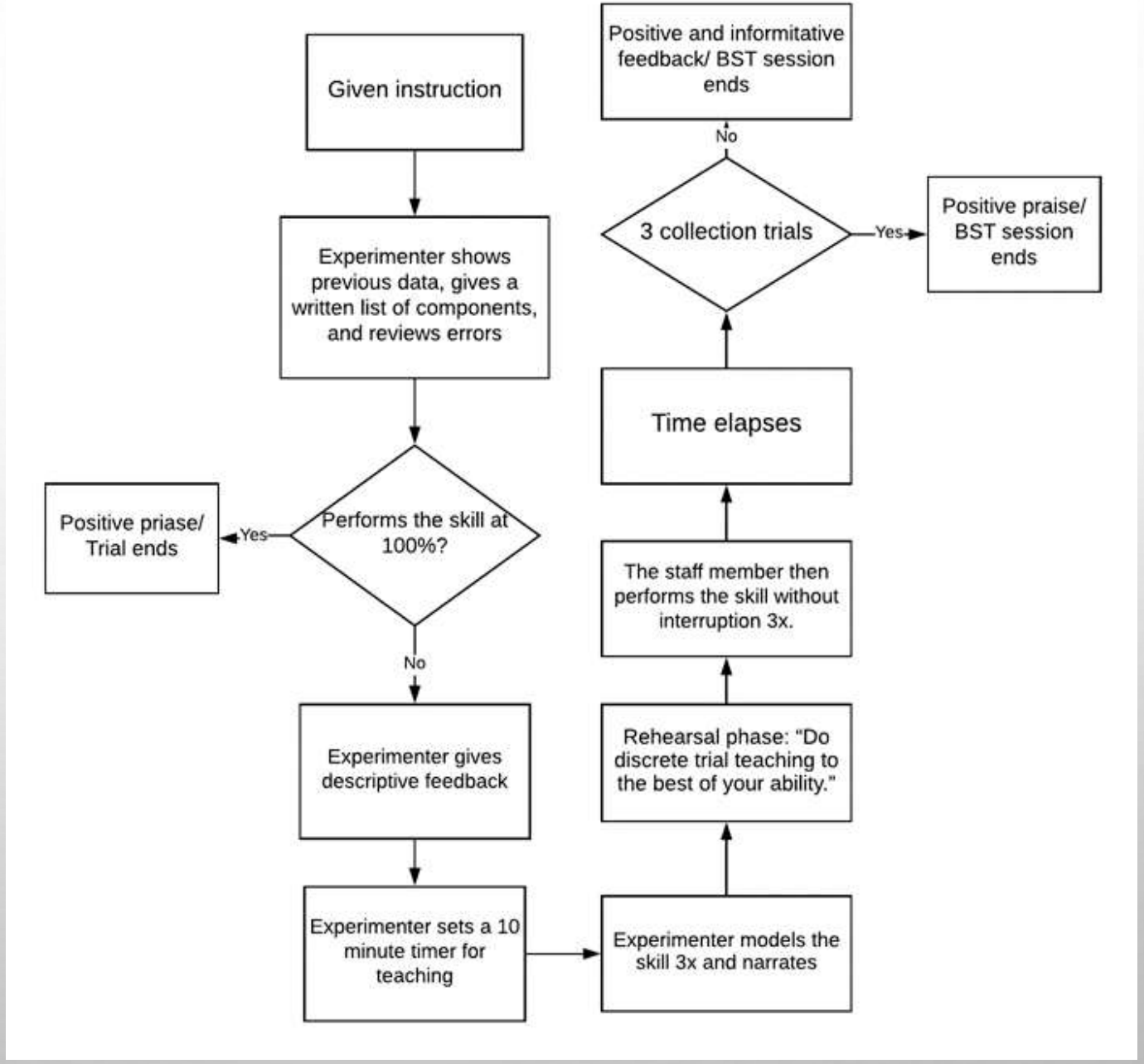
DEPENDENT VARIABLES:

- RESPOND TO VARIOUS INSTRUCTIONS GIVEN BY EXPERIMENTER
  - I.E. “PERFORM DISCRETE TRIAL TRAINING TO THE BEST OF YOUR ABILITY” & “ANALYZE THE GRAPH TO THE BEST OF YOUR ABILITY”
- PERCENT CORRECT ACROSS SKILLS

BASELINE


Gives Instruction + written components
Performs task at 100%?
Yes
No
Experimenter says "Good job" in a neutral tone/ trial ends
Experimenter says "Good job" in a neutral tone/ Trial ends

TREATMENT


Given instruction
Experimenter shows previous data, gives a written list of components, and reviews errors
Performs the skill at 100%?
Yes
Positive priase/ Trial ends
No
Experimenter gives descriptive feedback
Experimenter sets a 10 minute timer for teaching
Experimenter models the skill 3x and narrates
Rehearsal phase: "Do discrete trial teaching to the best of your ability."
The staff member then performs the skill without interruption 3x.
Time elapses
3 collection trials
Yes
Positive praise/ BST session ends
No
Positive and informitative feedback/ BST session ends

DATA COLLECTION

Sd: Given a graph + "analyze the graph to the best of your ability"

Target	Date/Initials:		
1. check at 3 ascending data points (1 cm below x axis, 1 cm to the right of the session number)	Y N NA	Y N NA	Y N NA
2. phase change after 3 decending data points (vertical dashed line from x-axis to 1 cm above y axis)	Y N NA	Y N NA	Y N NA
3. phase change after 3 flat data points (vertical dashed line from x-axis to 1 cm above y axis)	Y N NA	Y N NA	Y N NA
4. phase change after ascending to 4 flat (vertical dashed line from x-axis to 1 cm above y axis)	Y N NA	Y N NA	Y N NA
5. check if 3/5 data points are ascending (1 cm below x axis, 1 cm to the right of the session number)	Y N NA	Y N NA	Y N NA
6. phase change if 3/5 data points are decending (vertical dashed line from x-axis to 1 cm above y axis)	Y N NA	Y N NA	Y N NA
7. phase change line inserted after last data point where mastery criteria (3 data points at 80% or higher) is met (vertical dashed line from x-axis to 1 cm above y axis)	Y N NA	Y N NA	Y N NA
8. Continue process (steps 1-7) if appropriate	Y N NA	Y N NA	Y N NA
Percent Correct			

DATA COLLECTION

Sd: Given a skill + "teach this skill using DTT to the best of your ability"

	Date/Initials:			
Target				
Conducts preference assessment	**Y N NA**	**Y N NA**	**Y N NA**	**Y N NA**
Clears extraneous materials	**Y N NA**	**Y N NA**	**Y N NA**	**Y N NA**
Has reinforcers out of reach	**Y N NA**	**Y N NA**	**Y N NA**	**Y N NA**
Attempts to get attention	**Y N NA**	**Y N NA**	**Y N NA**	**Y N NA**
Gives instruction (with simultaneous prompts if necessary)	**Y N NA**	**Y N NA**	**Y N NA**	**Y N NA**
Verbal prompt (if needed)	**Y N NA**	**Y N NA**	**Y N NA**	**Y N NA**
Model prompt (if needed)	**Y N NA**	**Y N NA**	**Y N NA**	**Y N NA**
Physical prompt (if needed)	**Y N NA**	**Y N NA**	**Y N NA**	**Y N NA**
Provide Consequence	**Y N NA**	**Y N NA**	**Y N NA**	**Y N NA**
Record Data	**Y N NA**	**Y N NA**	**Y N NA**	**Y N NA**
Percent Correct				

BASELINE RESULTS

HOW WILL THIS EXTEND CURRENT LITERATURE?

- GIVES A POSSIBLE TRAINING TOOL.
- MAY SHOW THAT BST WORKS TO TRAIN TEACHERS (WSI) TO USE BEHAVIOR ANALYTIC TECHNIQUES.

EVIDENCE FOR USE: AVOIDANCE OF WATER ACTIVITY: THE EFFECTS OF GRADUAL EXPOSURE ON AQUATIC SKILLS (LAMPERT, 2018)

- WHAT ARE THE EFFECTS OF GRADUAL EXPOSURE ON AQUATIC SKILLS?

MATERIALS

- RULER
- DATA SHEET
- CAMERA

PARTICIPANTS

- PATRICIA
  - 6 YEARS OLD
  - DIAGNOSED WITH ASD
  - EXHIBITED PROTESTS, SCREAMS FOR HELP, FLAILING, AND FORCING HERSELF UNDER THE WATER BECAUSE OF NEAR DROWNING EXPERIENCE
- EZRA
  - 8 YEARS OLD
  - DIAGNOSED WITH ASD
  - RESISTANT TO ALL WATER ACTIVITIES, UNLESS HOLDING ON TO AN ADULT

SETTING

OUTDOOR POOL SUPERVISED BY A LIFEGUARD.

DEPENDENT VARIABLE

- PERCENT OF STEPS COMPLETED IN THE HIERARCHY CALMLY AND WITHOUT ADDITIONAL ASSISTANCE FOR EACH AQUATIC SKILL

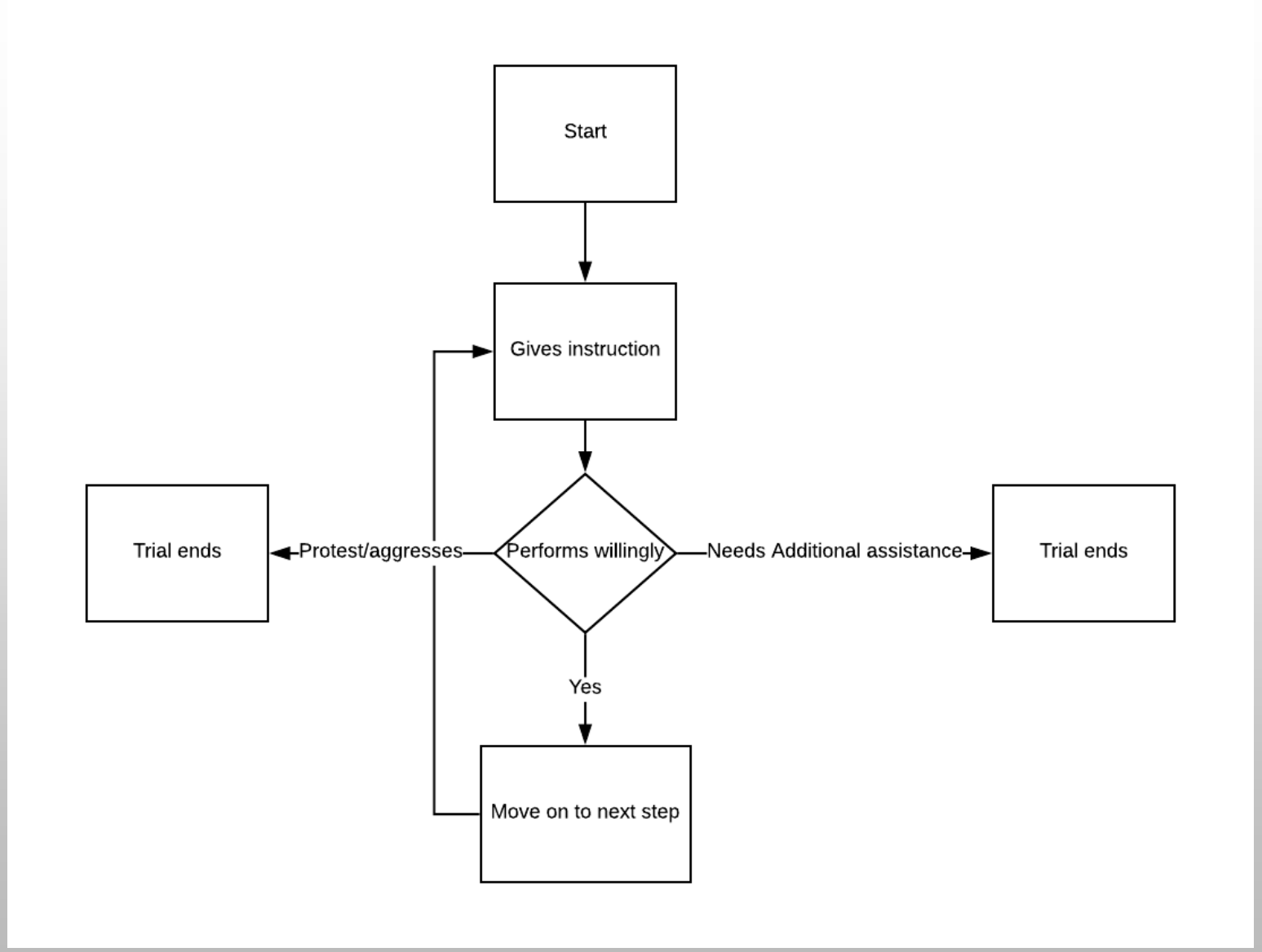
EXAMPLE HIERARCHY

Sample from Ezra's Hierarchy -"Grab the wall"
1. In 1.85 meters ,.61 meters away from the wall + "Grab the wall
2. In 1.85 meters, 1.22 meters away from the wall + "Grab the wall"
3. In 1.85 meters, 1.83 meters away from the wall + "Breathe at least 1 time and grab the wall"
4. In 1.85 meter, 2.44 meters away from the wall + "Grab the wall" (Will breathe at least 1x independently)
5. In 1.85 meters, 3.05 meters away from the wall + "Grab the wall" (Will breathe at least 1x independently)
6. In 1.85 meters, 4.57 meters away from the wall + "Grab the wall" (Will breathe at least 2x independently)
7. In 1.85 meters, 6.09 meters away from the wall + "Grab the wall" (Will breathe at least 2x independently)
8. In 1.85 meters, 6.86 meters away from the wall + "Grab the wall" (Will breathe at least 2x independently)
9. On wall with therapist 3.35 meters out in 1.83 meters of water + "Swim to me" (Will breathe at least 1x independently)
10. On wall with therapist 6.86 meters out in 1.83 meters of water + "Swim to me" (Will breathe at least 2x independently)

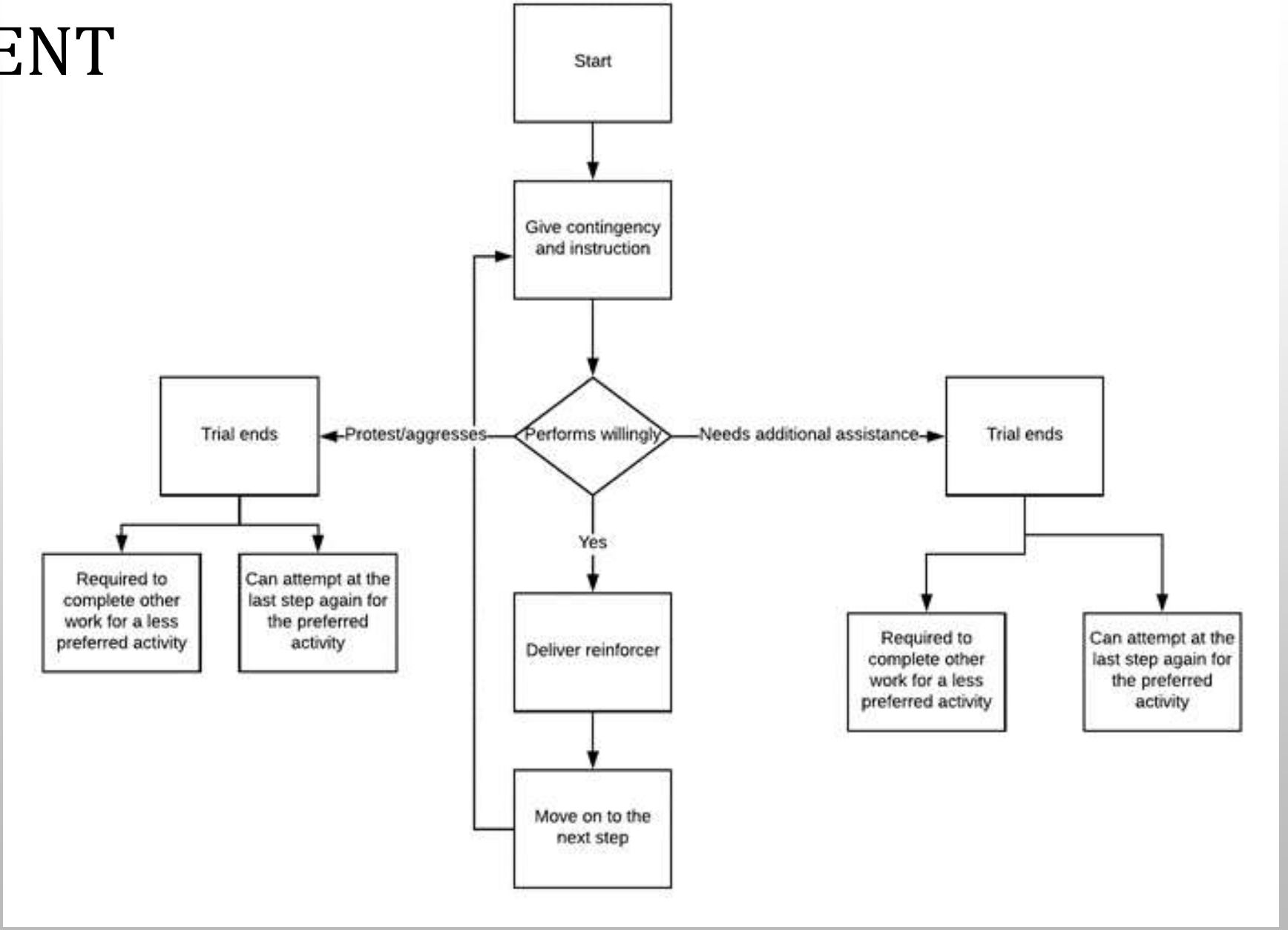
EXAMPLE 2

Sample from Ezra's Hierarchy -"Float on your back"
1. In 1.85 meters, laying back with full physical prompts + backwards count of 5 seconds
2. In 1.85 meters, laying back with full physical prompts + backwards count of 10 seconds
3. In 1.85 meters, laying back with partial physical prompts + backwards count of 5 seconds
4. In 1.85 meters, laying back with partial physical prompts + backwards count of 10 seconds
5. In 1.85 meters, laying back with partial physical prompts + backwards count of 15 seconds
6. In 1.85 meters, laying back, hands are removed + backwards count 5 seconds
7. In 1.85 meters, laying back, hands are removed + backwards count 10 seconds
8. In 1.85 meters, laying back, hands are removed + backwards count 15 seconds
9. In 1.85 meters, laying back + turn over + partial physical
10. In 1.85 meters, laying back + turn over

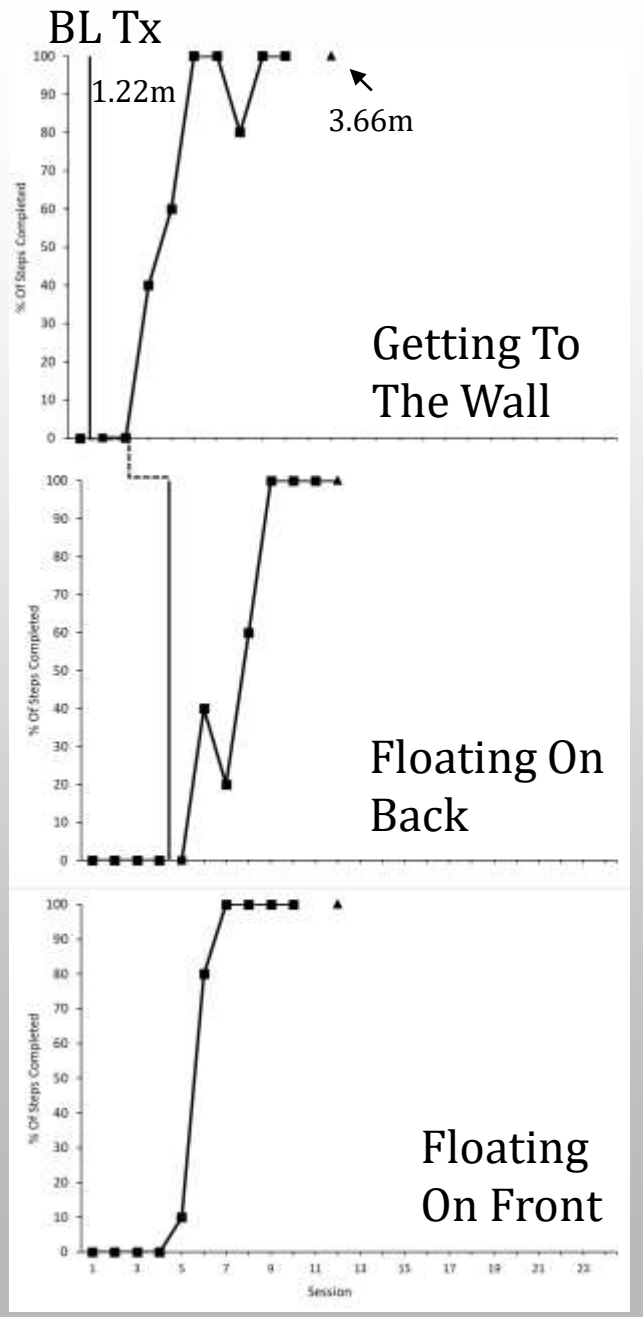
BASELINE


Start
Gives instruction
Performs willingly
Protest/aggresses
Trial ends
Needs Additional assistance
Trial ends
Yes
Move on to next step

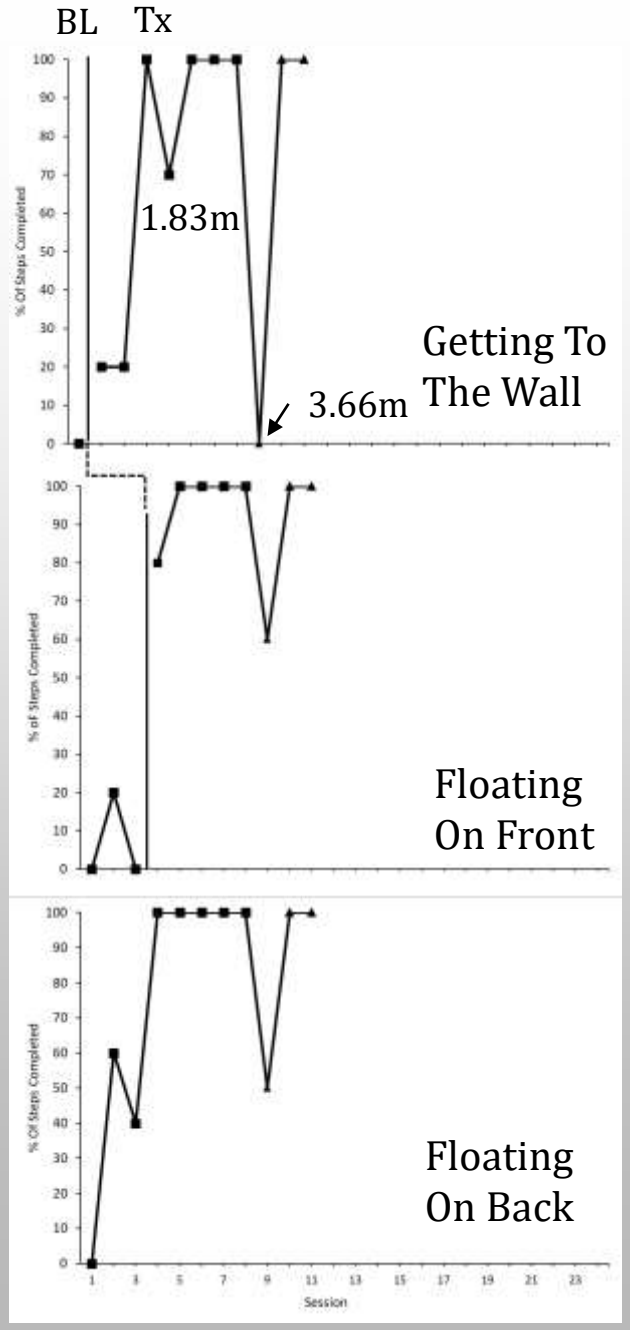
TREATMENT


Start
Give contingency and instruction
Performs willingly
Protest/aggresses
Trial ends
Required to complete other work for a less preferred activity
Can attempt at the last step again for the preferred activity
Needs additional assistance
Trial ends
Required to complete other work for a less preferred activity
Can attempt at the last step again for the preferred activity
Yes
Deliver reinforcer
Move on to the next step

RESULTS: PATRICIA



RESULTS: EZRA



VIDEO

HOW DOES THIS EXTEND CURRENT LITERATURE?

- Both participants were able to complete American Red Cross Learn-To-Swim Exit Assessment
- Both participants were able to perform 1 new skill without formal training
- Generalization to new depth/pool

FUTURE RESEARCH

- Researching the benefits of teaching particular skills first
- Researching the effectiveness of an escape avoidance hierarchy on new skills
- Researching the effectiveness of a 1 trial per day vs. multiple
- Component analysis

POSSIBLE EFFECT OF DECREASING AVOIDANCE

- IS IT POSSIBLE THAT DECREASING AVOIDANCE MIGHT INCREASE RISK OF CHILD SEEKING OUT WATER AND DROWNING?
  - NATURAL CONTINGENCIES DURING HIERARCHY TRAINING MAY PROMOTE "HEALTHY" FEAR OF WATER – MORE SUBTLE SAFETY SKILLS ARE LEARNED (E.G., REFRAIN FROM SWALLOWING WATER, AVOID GOING OUT TOO FAR)
  - THE WORST CASE SCENARIO MAYBE DECREASING AVOIDANCE, BUT NOT TEACHING SWIM SKILLS
  - COMBINATION OF DECREASING AVOIDANCE AND DEVELOPING SWIM SKILLS MAY NOT SUBSTANTIALLY INCREASE RISK

EVIDENCE: COMPARISON OF FADING PROMPTS WITHIN VS ACROSS SESSION

- RESEARCH QUESTIONS
  - WHAT ARE THE EFFECTS OF MOST-TO-LEAST (MTL) PROMPTING ON THE ACQUISITION OF AQUATIC SKILLS?
  - IS IT MORE EFFICIENT TO FADE PROMPTS WITHIN-SESSION OR ACROSS-SESSION?

TARGET SKILLS

- ABBY WAS ASSESSED USING A CRITERION-REFERENCED ASSESSMENT FROM THE AMERICAN RED CROSS (AMERICAN RED CROSS, 2014).
  - TARGET SKILLS SELECTED FOR TREATMENT WERE THOSE THAT WERE NOT PERFORMED INDEPENDENTLY IN THE ASSESSMENT.

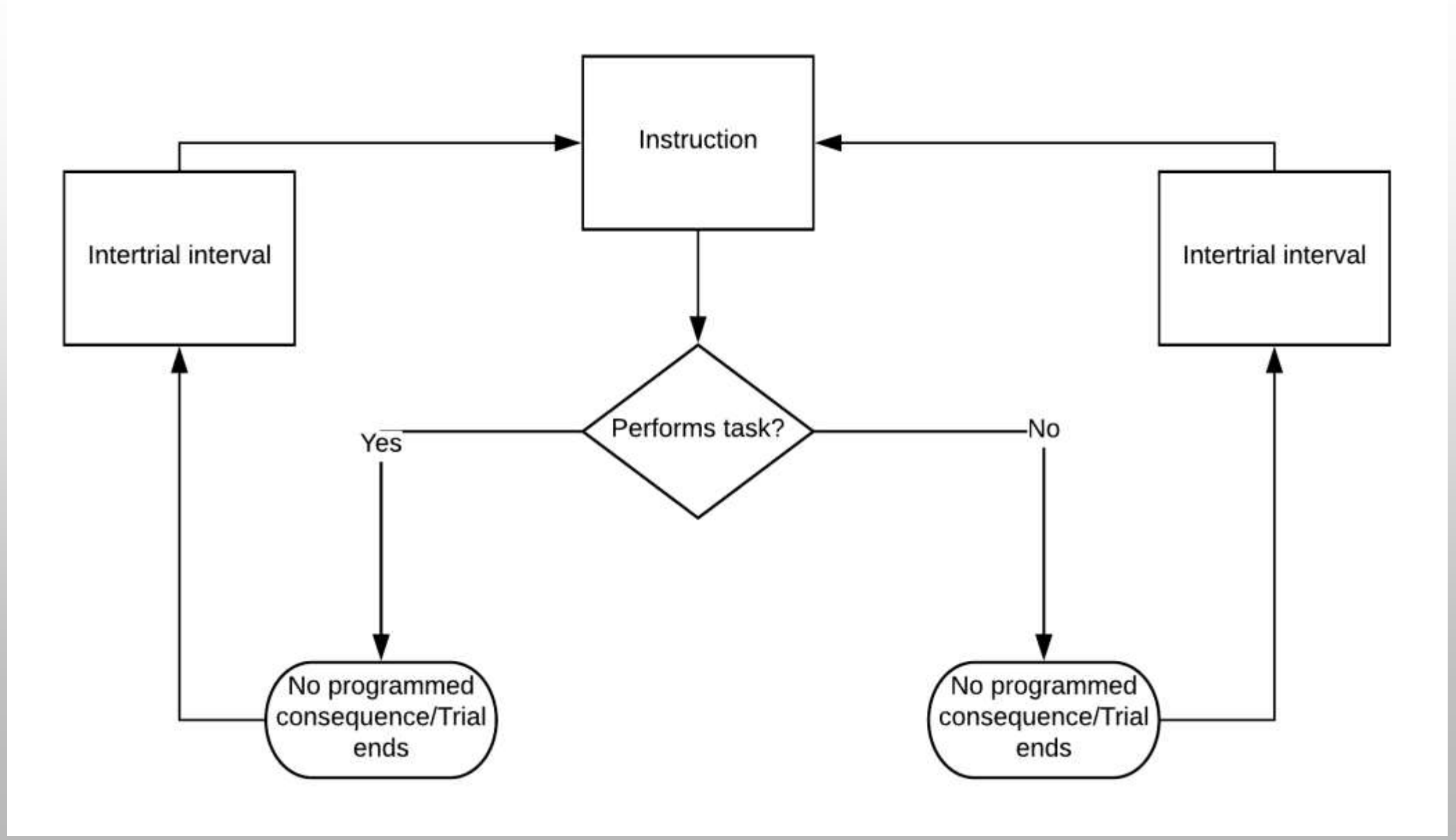
DEPENDENT VARIABLES

- PERCENTAGE OF TRIALS CORRECT FOR EACH AQUATIC SKILL, PER SESSION
- SESSIONS TO CRITERIA
- TRIALS TO CRITERIA
- TOTAL NUMBER OF ERRORS DURING TRAINING

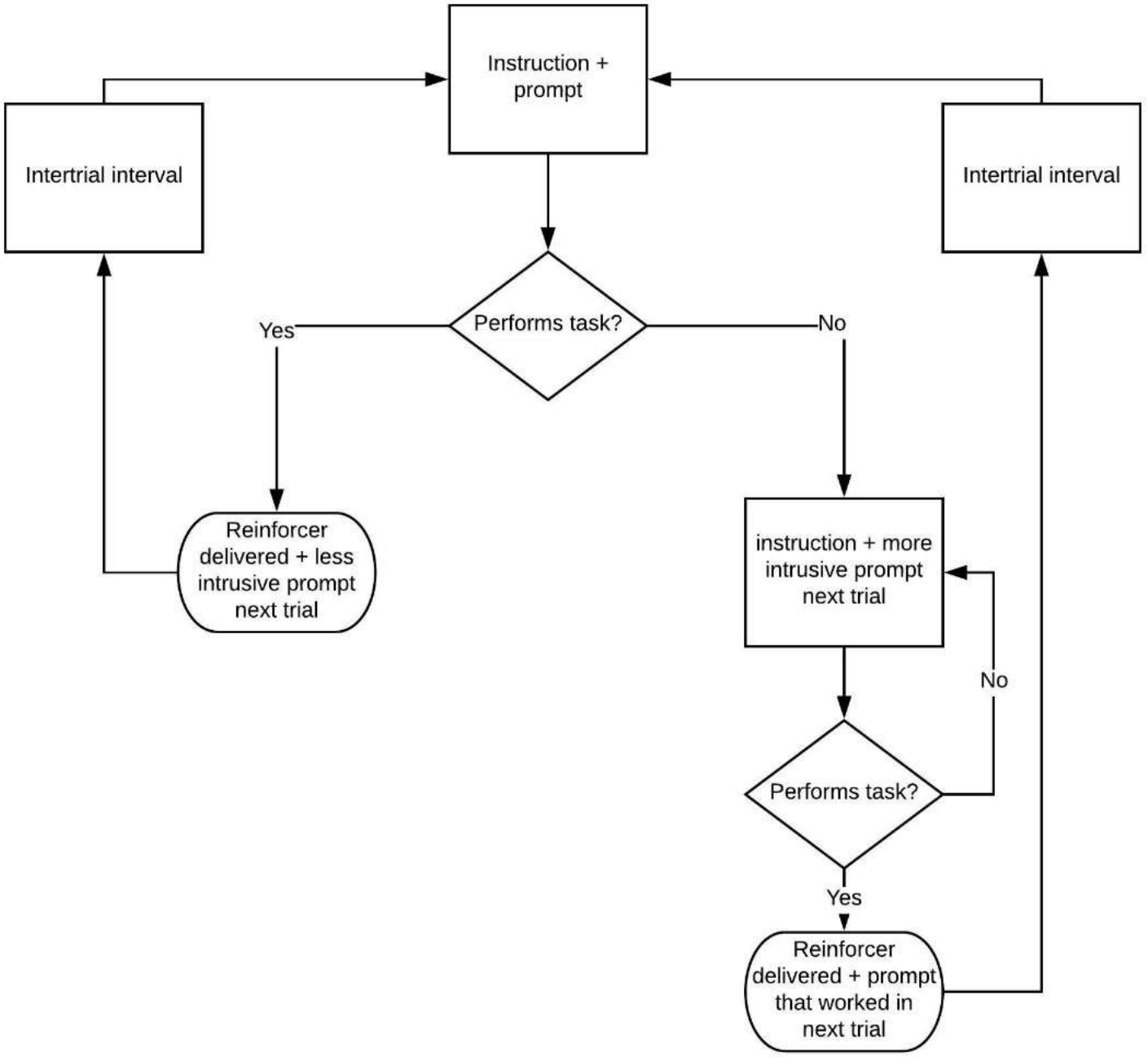
EXPERIMENTAL DESIGN

- MULTIPLE BASELINE ACROSS SKILLS
- BETWEEN SUBJECT COMPARISONS

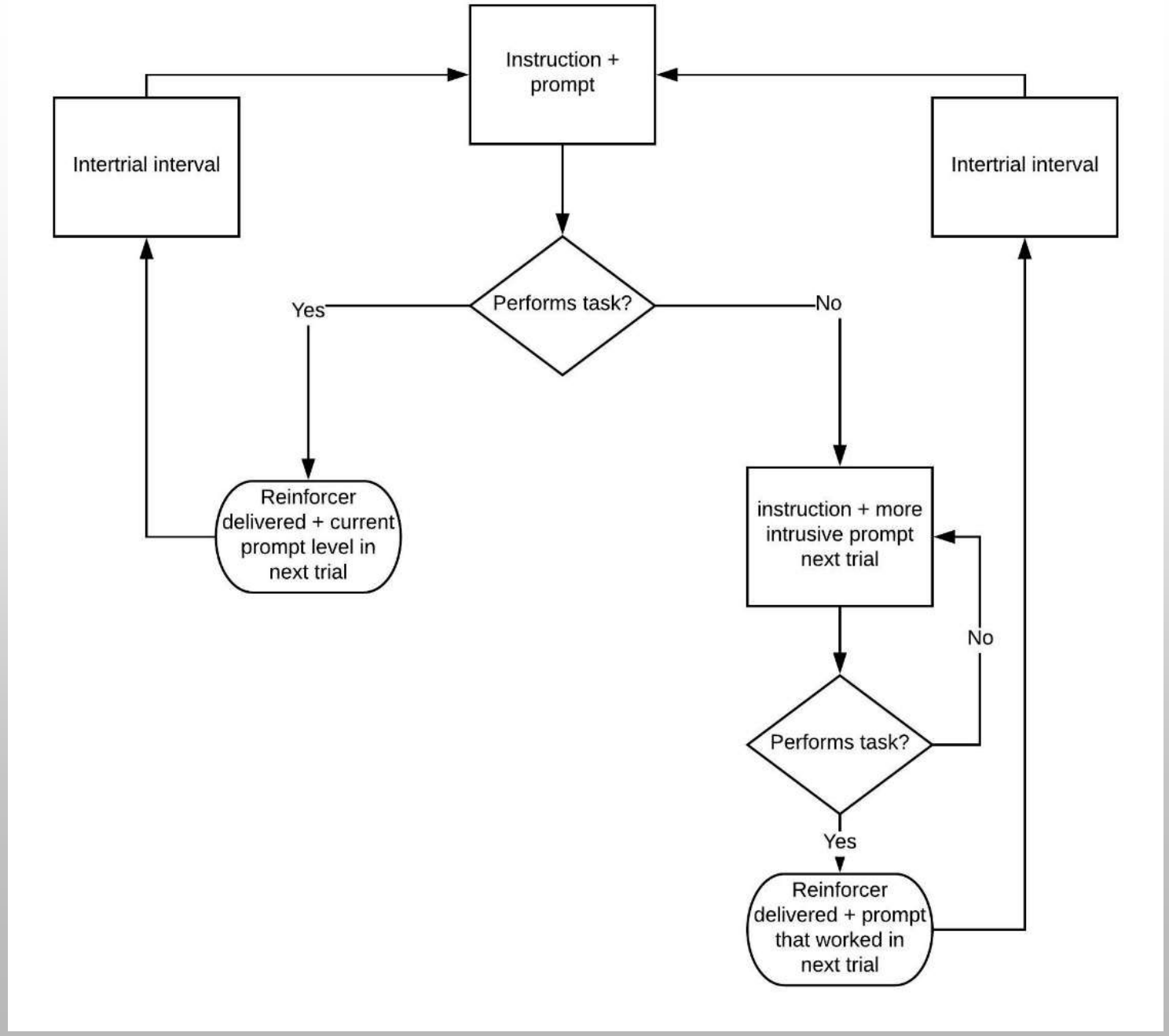
BASELINE


Instruction
Intertrial interval
Intertrial interval
Performs task?
Yes
No
No programmed consequence/Trial ends
No programmed consequence/Trial ends

WITHIN-SESSION

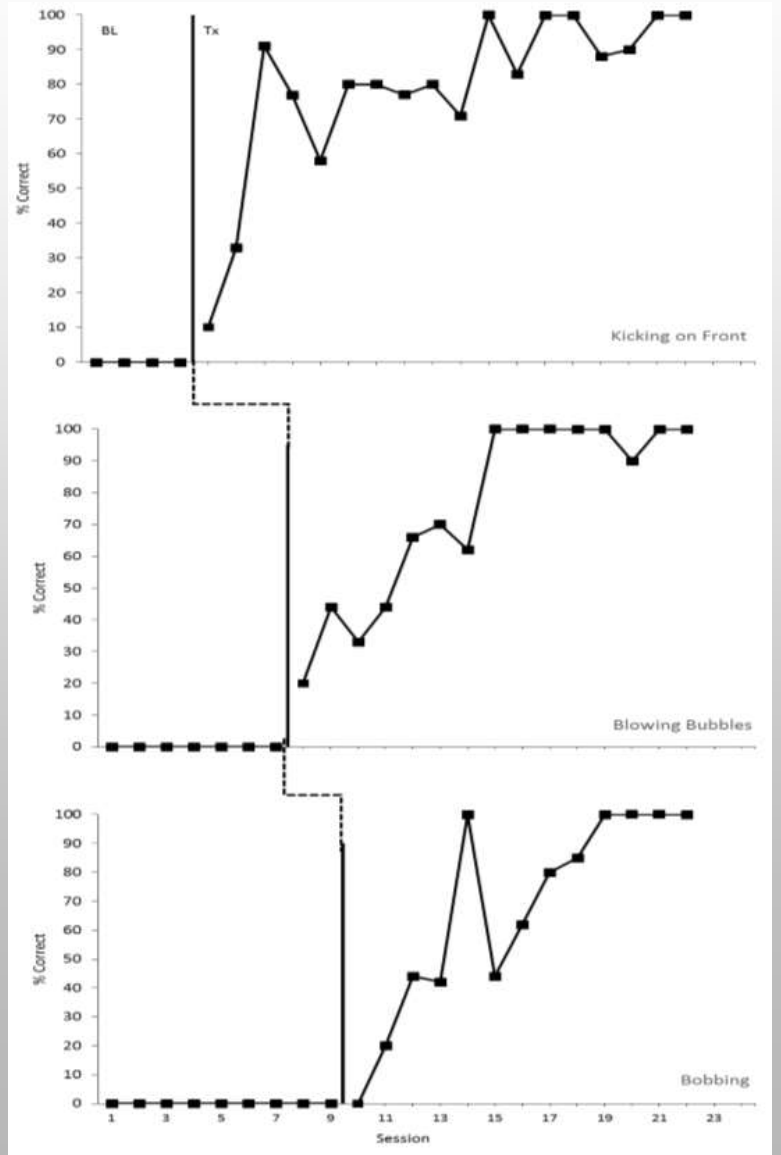


ACROSS-SESSION

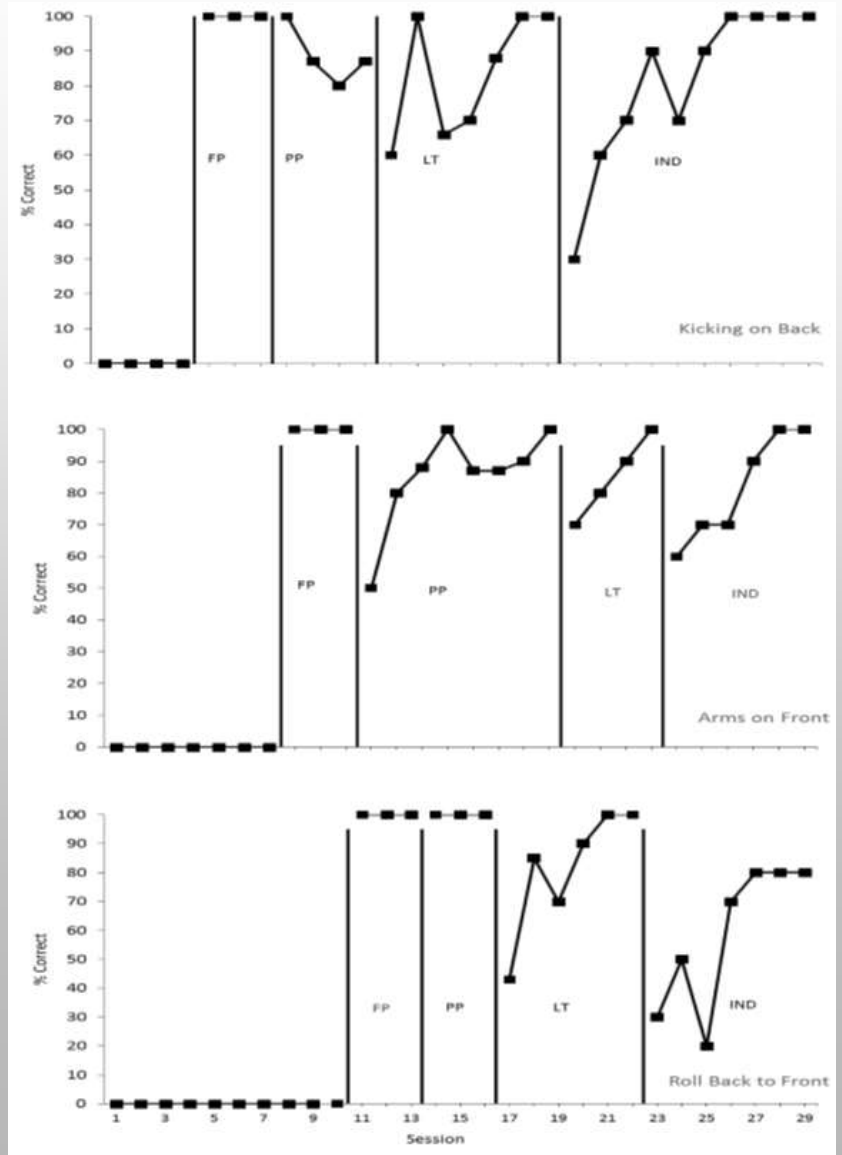


RESULTS

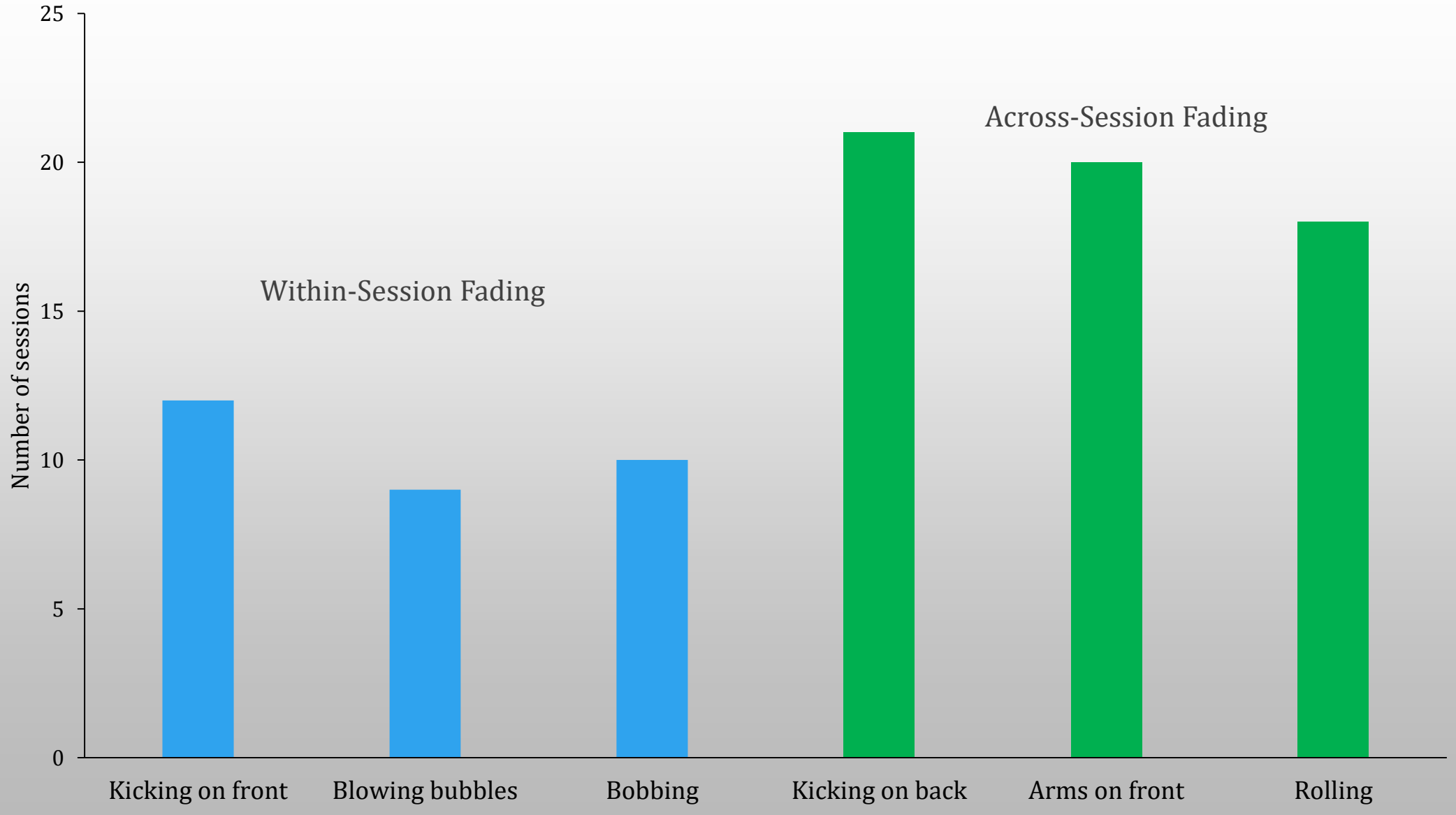
FADING WITHIN-SESSION



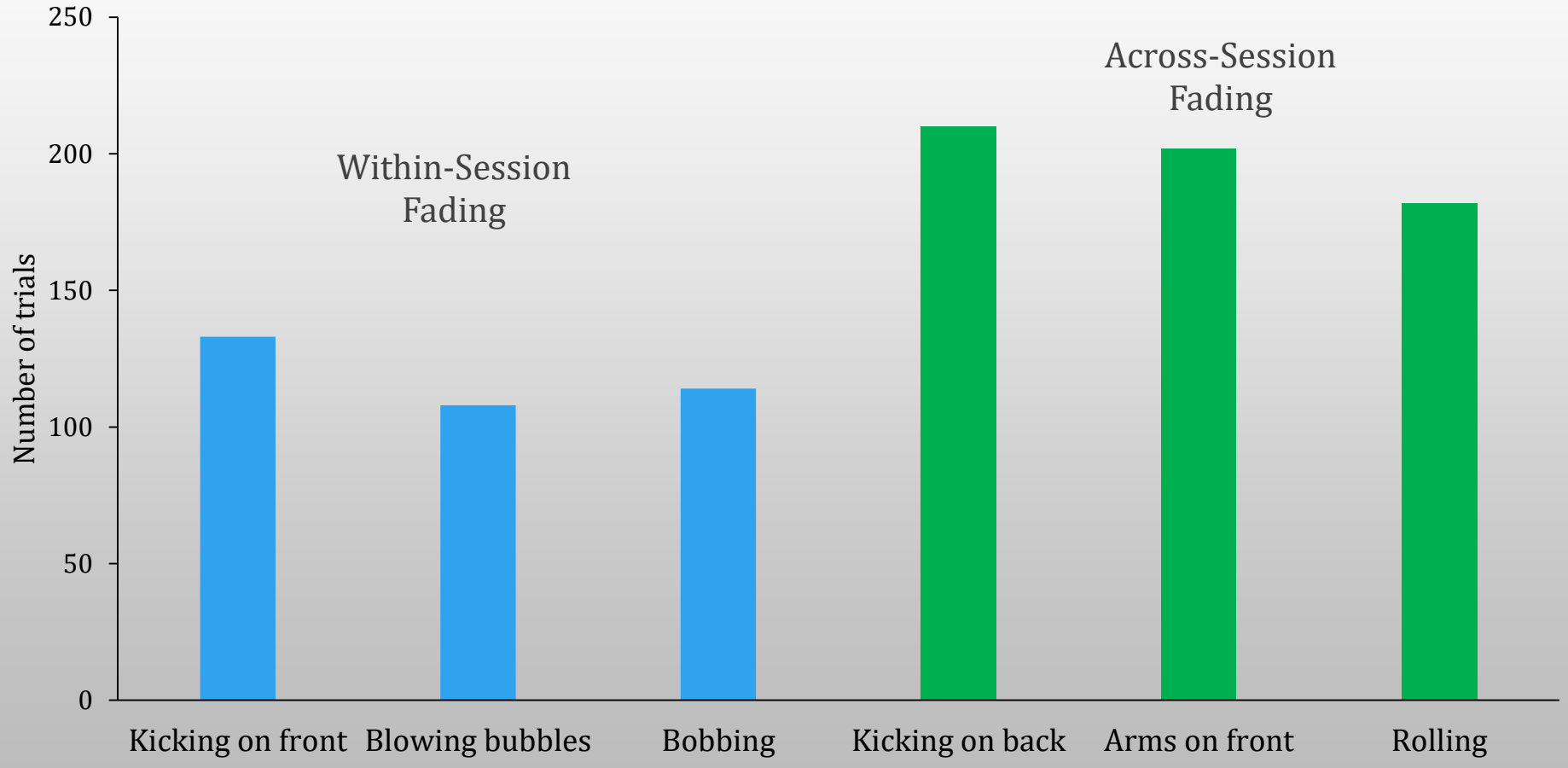
FADING ACROSS-SESSIONS



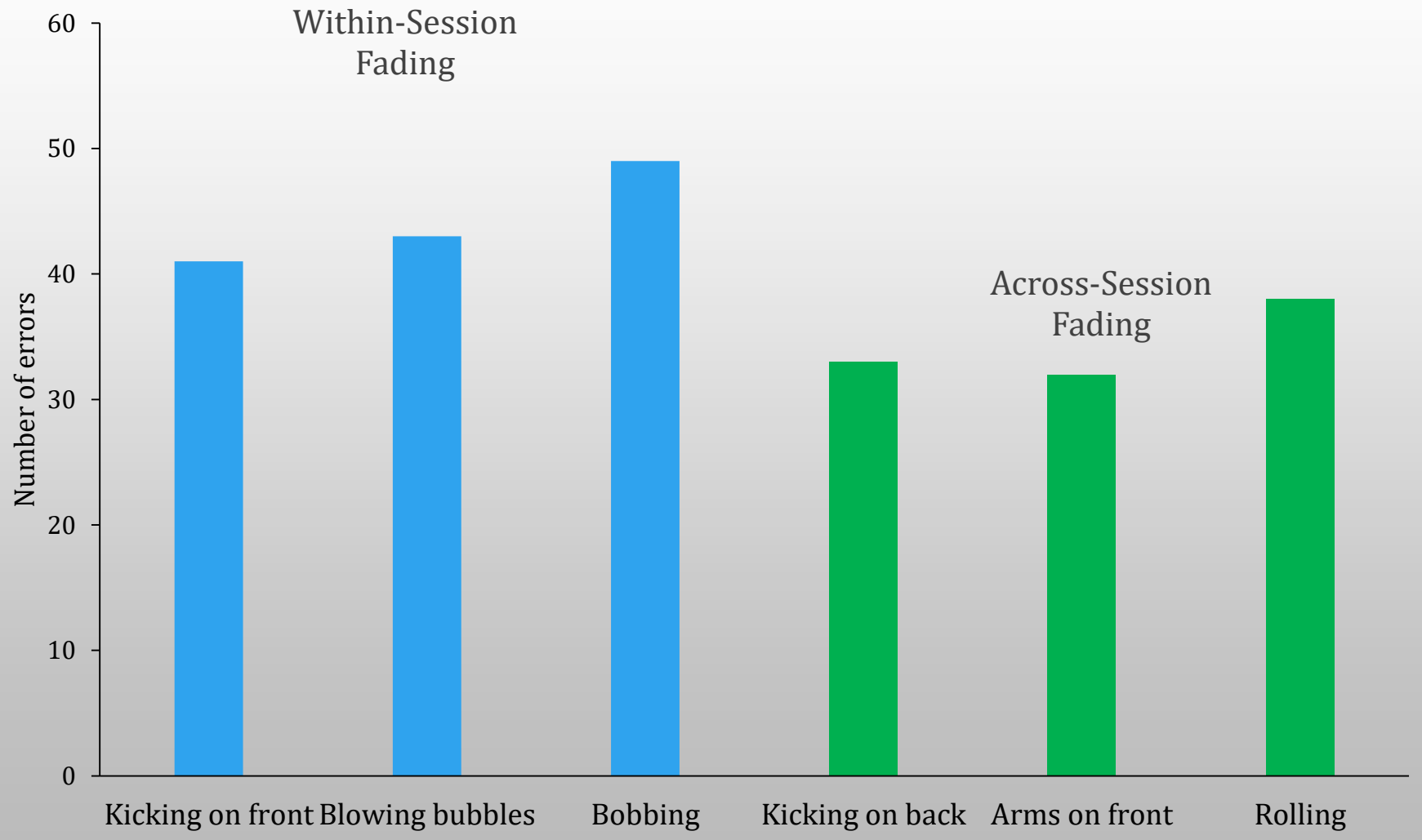
RESULTS: SESSIONS TO CRITERION



RESULTS: TRIALS TO CRITERION



RESULTS: # ERRORS

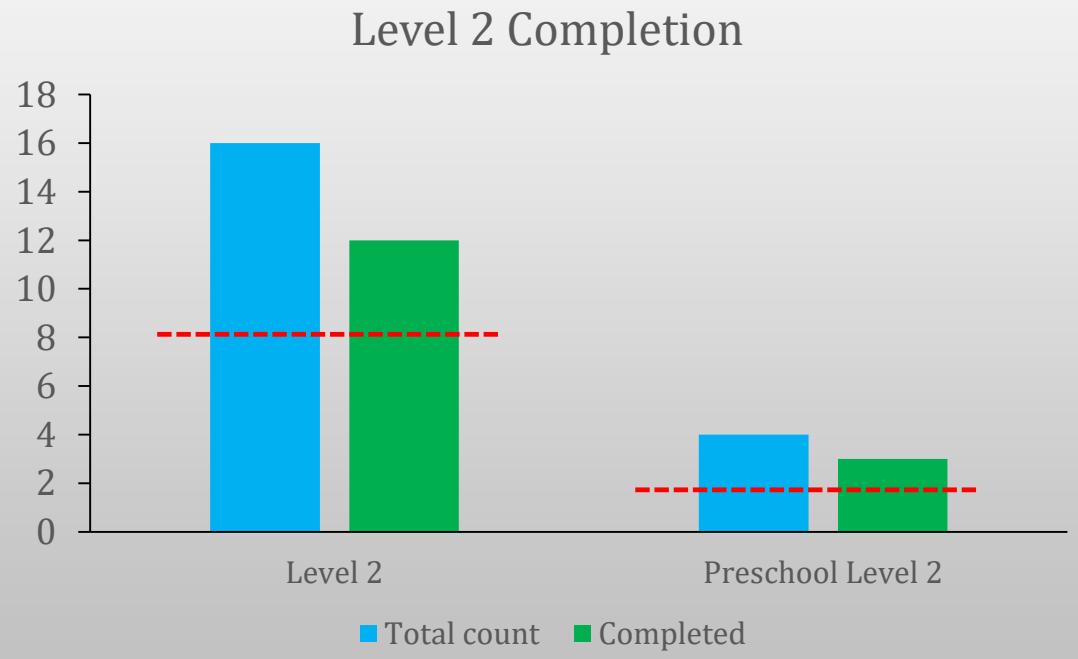


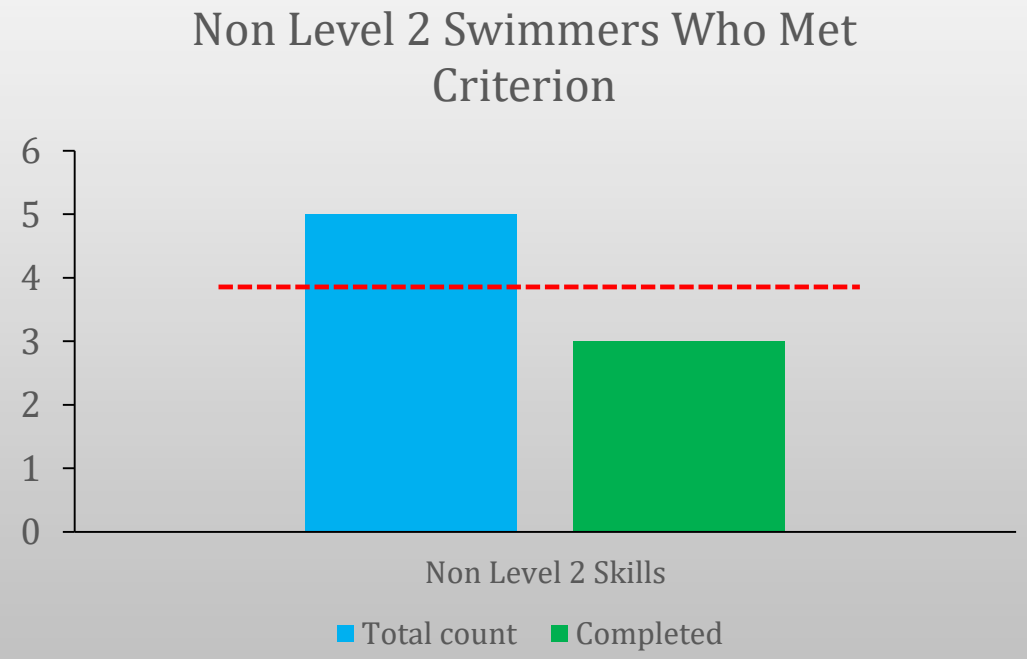
VIDEO

UNIVERSAL SWIMS GRANT OUTCOMES

- Serve 20 children
- Outcomes targets: 50% of participants will pass level 2
- Of the kids who do not pass level 2:
    - 80% will learn the following:
        1. Breath control and submerging
        2. Buoyancy and/or gliding
        3. Will be able to get to the pool side from 2 feet away

OUTCOMES DATA





COMMUNITY PARTNERS:

UNIVERSAL ORLANDO FOUNDATION
YMCA
RDV FOUNDATION
AUTISM SPEAKS
USA SWIMMING
ROTH JEWISH COMMUNITY CENTER GREATER ORLANDO

PROMPT STRATEGIES

Traditional view: Prompts are antecedents used to evoke desired response to permit reinforcer delivery

TIMING OF PROMPTS: WHEN ARE THEY GIVEN?

- SIMULTANEOUS PROMPTS: THE SAME TIME AS, OR JUST AFTER, THE INSTRUCTION

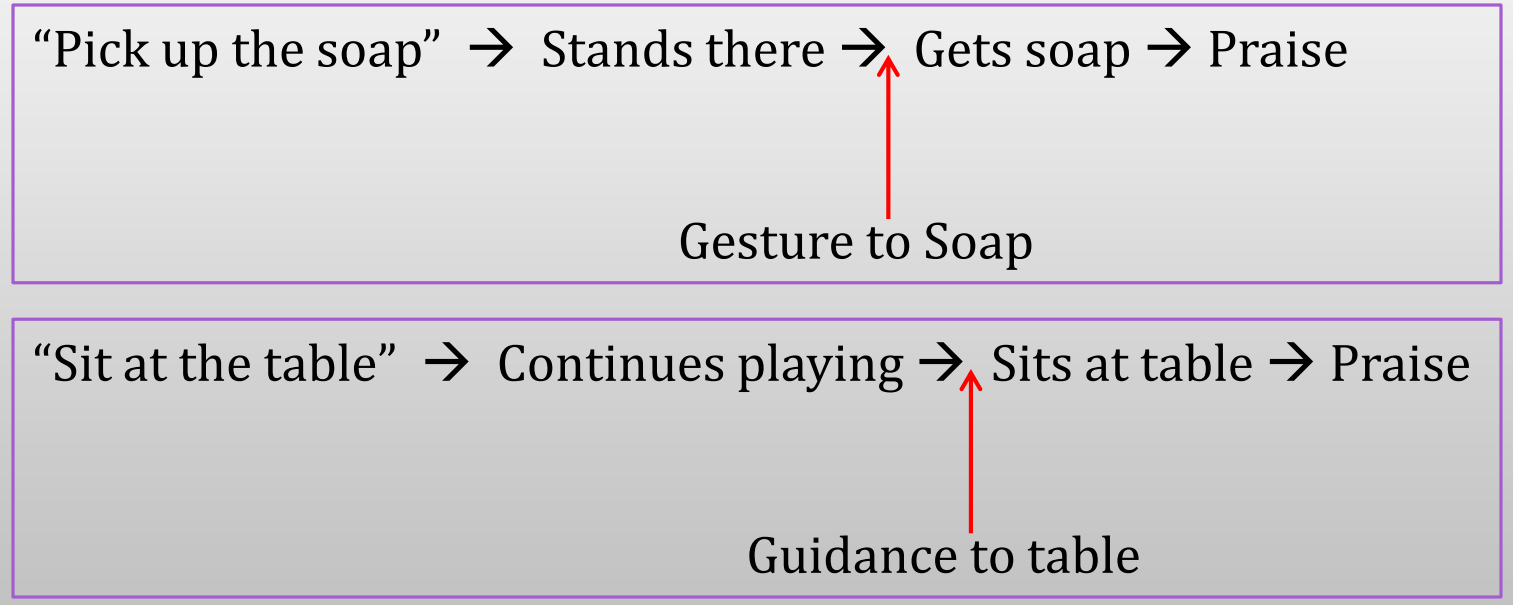
"Pick up the soap" → Gets Soap → Praise
+
Gestural Prompt to soap

"Please sit down" → Sits down → Praise
+
Gentle physical guidance

"Say Table" → "Table" → Snack
+
Show picture of table

TIMING OF PROMPTS: WHEN ARE THEY GIVEN?

- DELAYED PROMPTS: AFTER THE LEARNER HAS A CHANCE TO PERFORM THE SKILL – BUT DOES NOT



PROMPTS CAN FOLLOW…

Error correction: Prompts can follow incorrect responses

Functional Analyses: Prompts are terminated following problem behavior

Ergo…What are the effects of prompts as consequences?

PROCEDURE

Control: Child in bathroom with toys but no demands

Physical Prompt: Physical prompt to sit on toilet – remove prompt contingent on tantrum

Verbal Demand: Request to sit on toilet every 5 s – terminate request contingent on on tantrum

FUNCTIONAL ANALYSIS

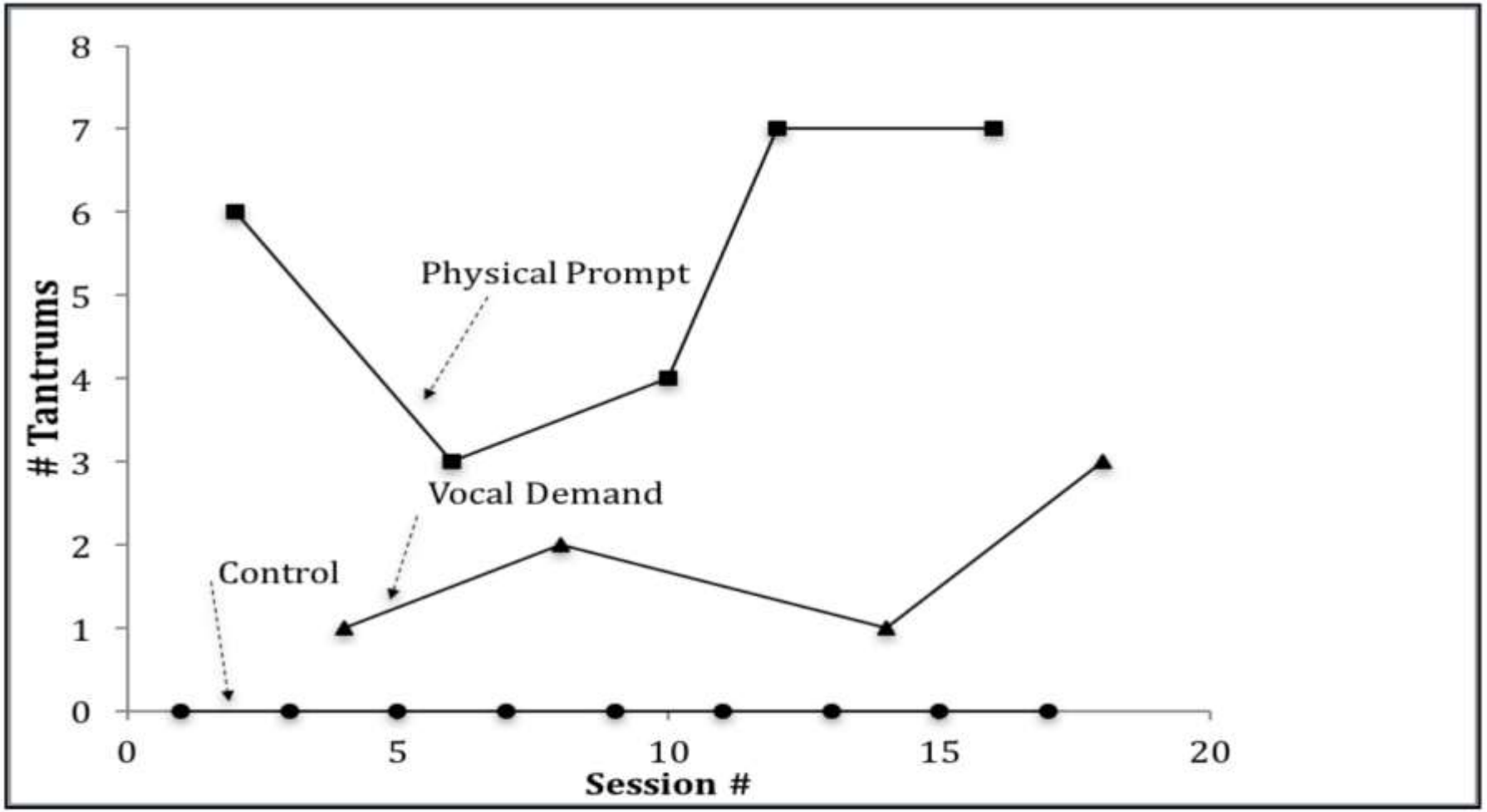
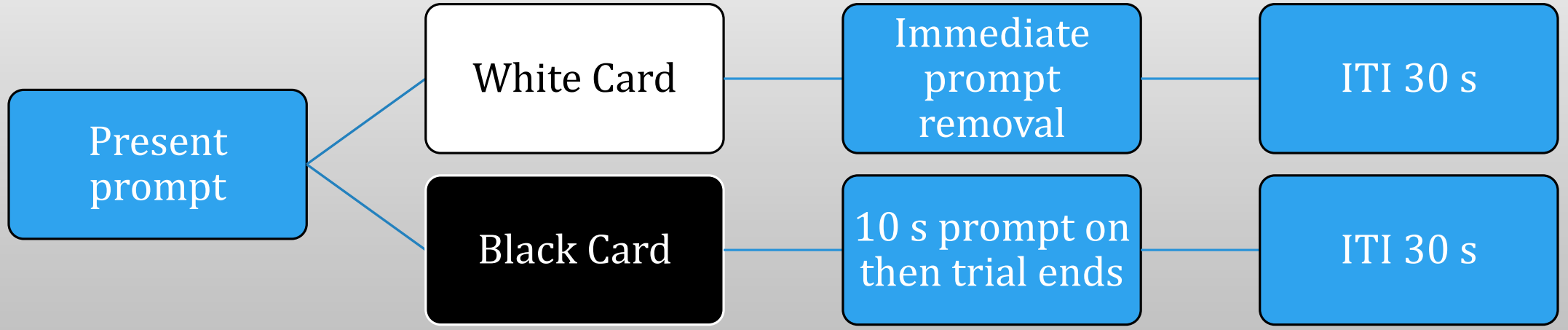
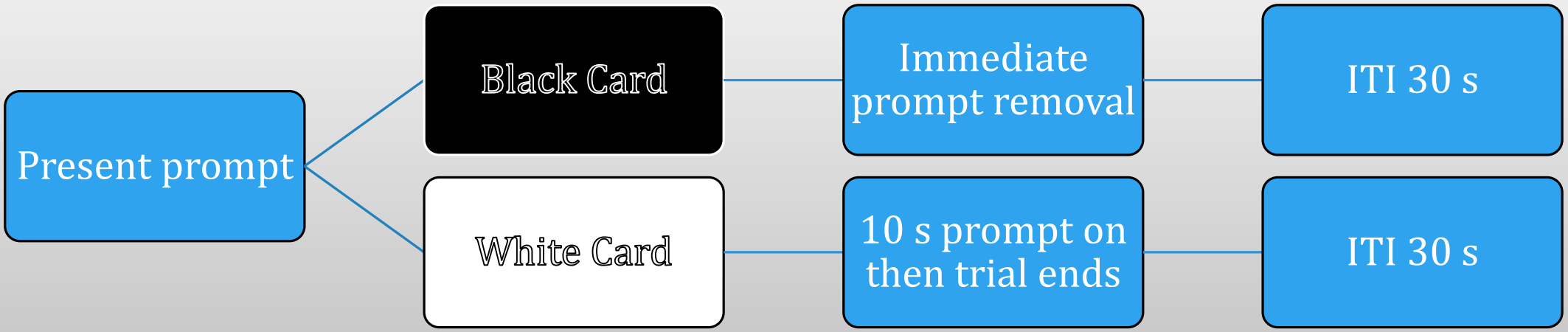


Figure 1. The number of tantrums per session in physical prompt, vocal prompt, and control conditions.

CONCURRENT OPERANTS REPLICATION



CONCURRENT OPERANTS REPLICATION: REVERSAL



RESULTS

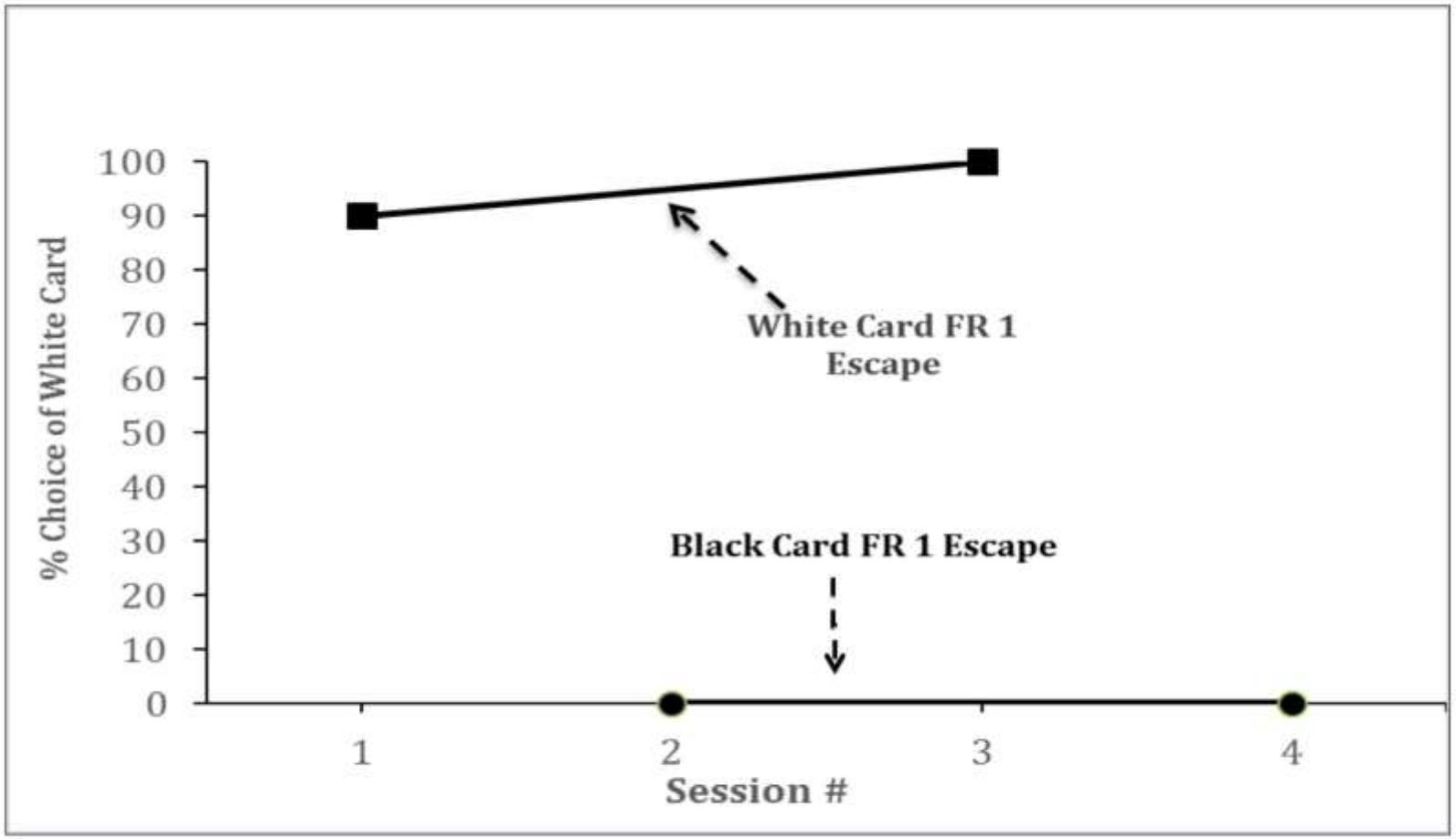


Figure 2. The percentage of choice trials in which the white card was selected. Note that in sessions 1 and 3, the white card was associated with FR 1 escape, and in sessions 2 and 4, the black card was associated with FR 1 escape.

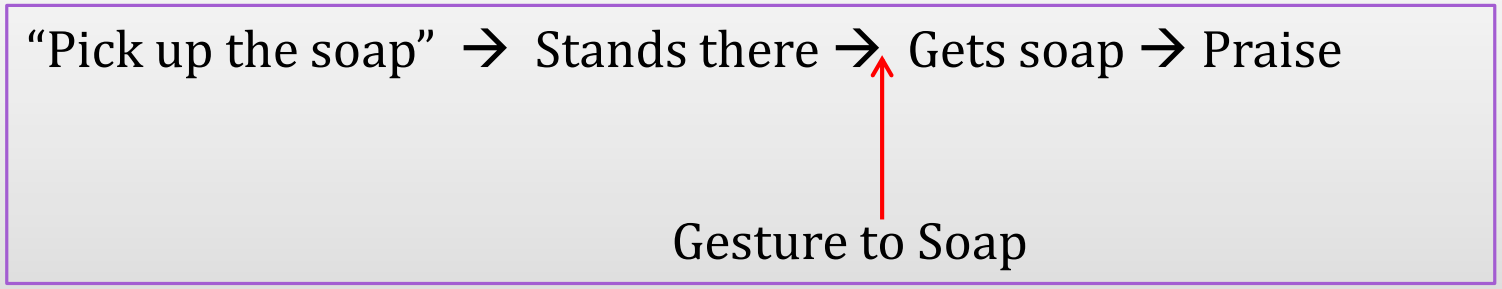
FUTURE RESEARCH

- WHAT ABOUT PROMPTS AS POSITIVE REINFORCERS?
- CONCURRENT OPERANTS ?

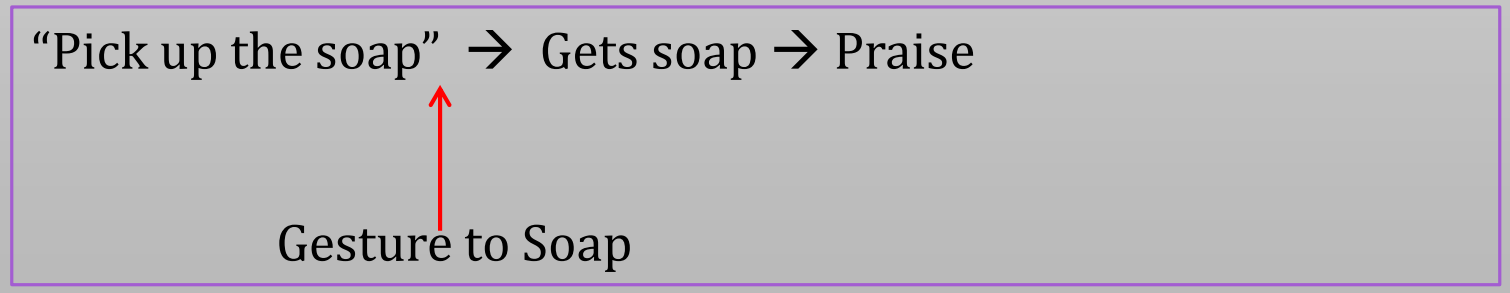
CONCURRENT OPERANTS: PROMPTS AS POSITIVE REINFORCERS

ASSESSMENT DRIVEN PROMPT PROCEDURES

Prompts = Negative reinforcers



Prompts = Positive reinforcers



PROMPT MAINTAINED BEHAVIOR? TEMPORAL LOCUS OF PROMPTS

REVIEW: TIMING OF PROMPTS

- Simultaneous Prompts: The same time as, or just after, the instruction

"Pick up the soap" → Gets Soap → Praise
+
Gestural Prompt to soap

- DELAYED PROMPTS: AFTER THE LEARNER HAS A CHANCE TO PERFORM THE SKILL – BUT DOES NOT

"Pick up the soap" → Stands there → Gets soap → Praise

Gesture to Soap

BASELINE AND TREATMENT

Baseline: Instruction only – no programmed consequences

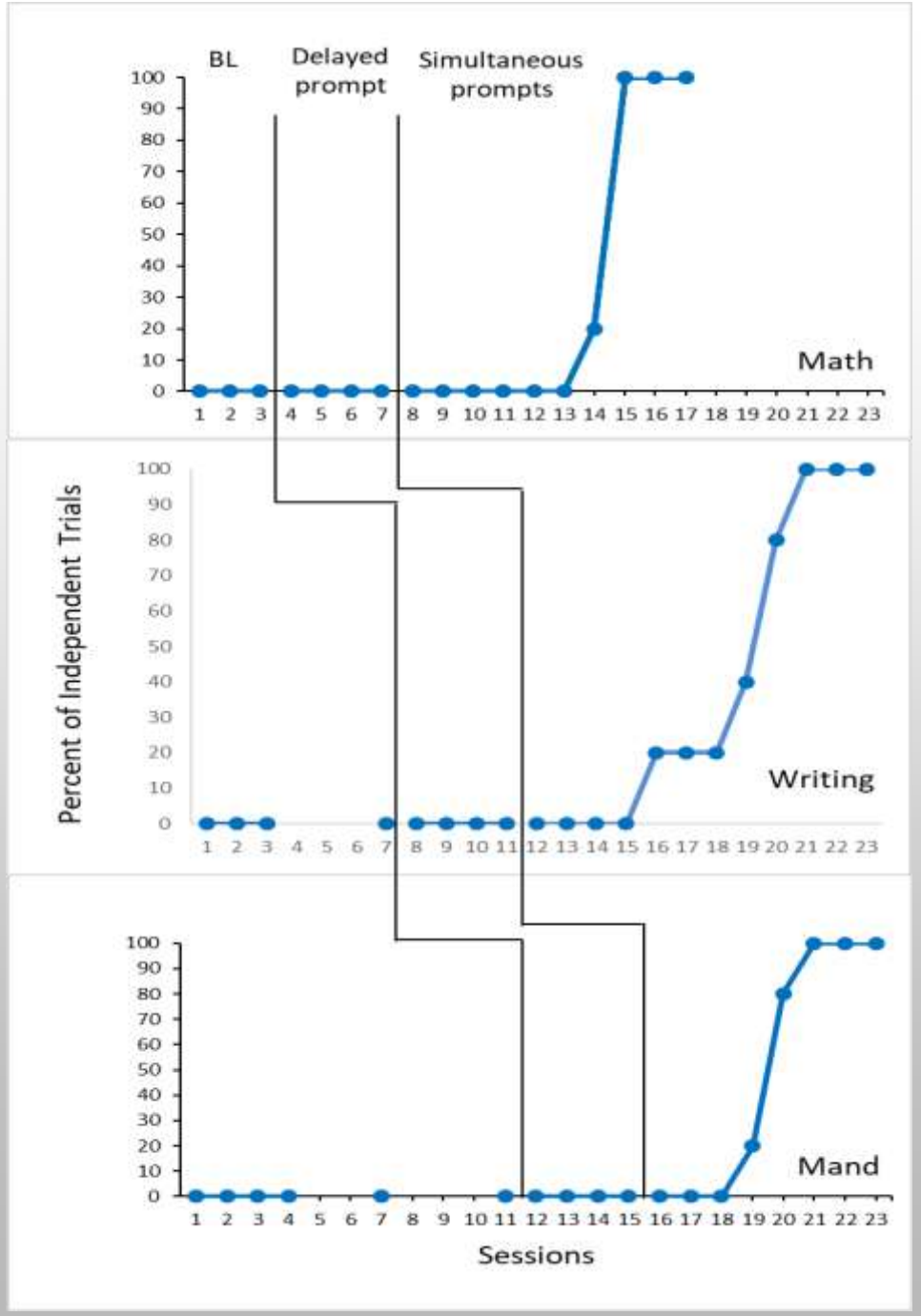
Treatment:

Delayed Prompts

Simultaneous Prompts

Math equation and Write From Dictation	Mand
Full physical Touch hand Gesture Independent	"Ms Cleo, tie my shoe" "Ms Cleo…" Independent

RESULTS


BL
Delayed prompt
Simultaneous prompts
Math
Writing
Mand
Percent of Independent Trials
Sessions

DISCUSSION

- Prompts are most often seen as antecedents
- Prompts can be programed after incorrects and/or problem behavior
- Prompt termination (and perhaps presentation) may have important effects
- The temporal locus of prompting maybe an important variable

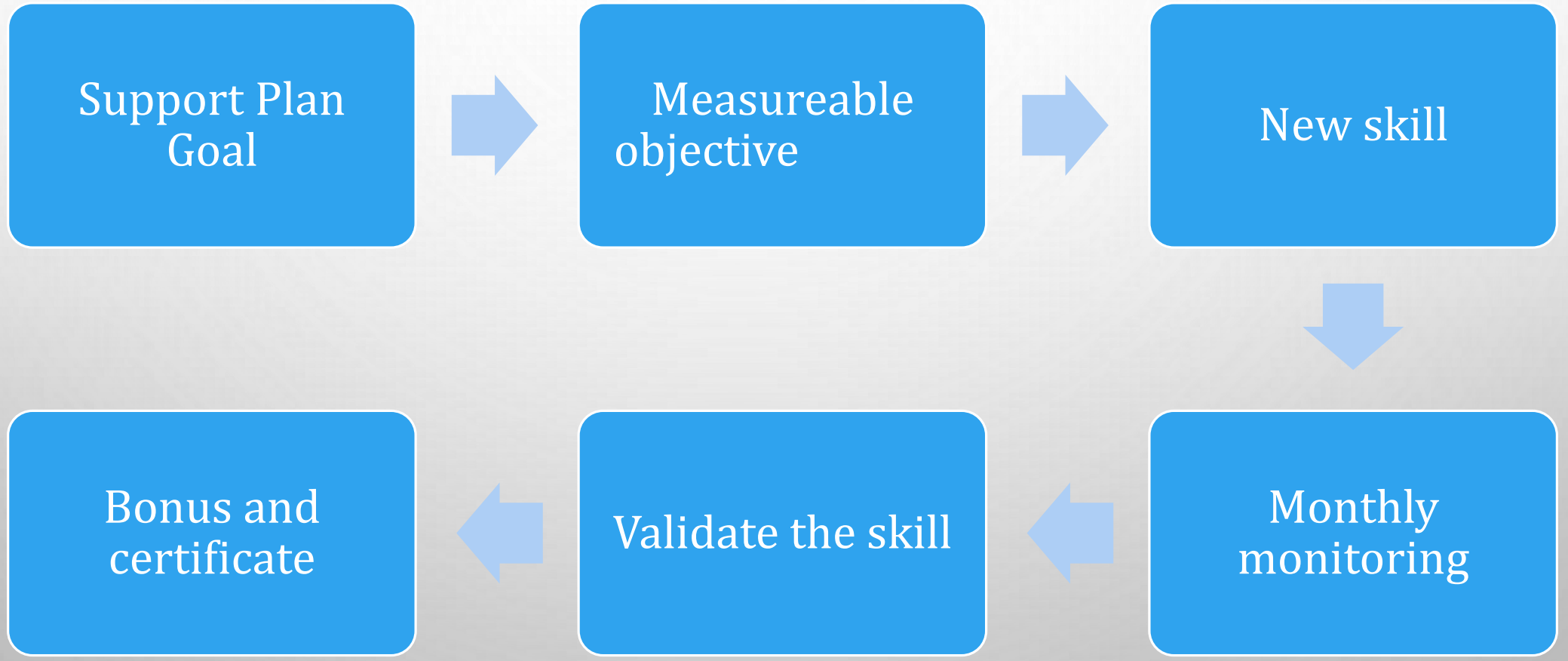
HEALTH & SAFETY TARGETS WITH ADULTS: SKILL VALIDATION SYSTEM

ISSUE

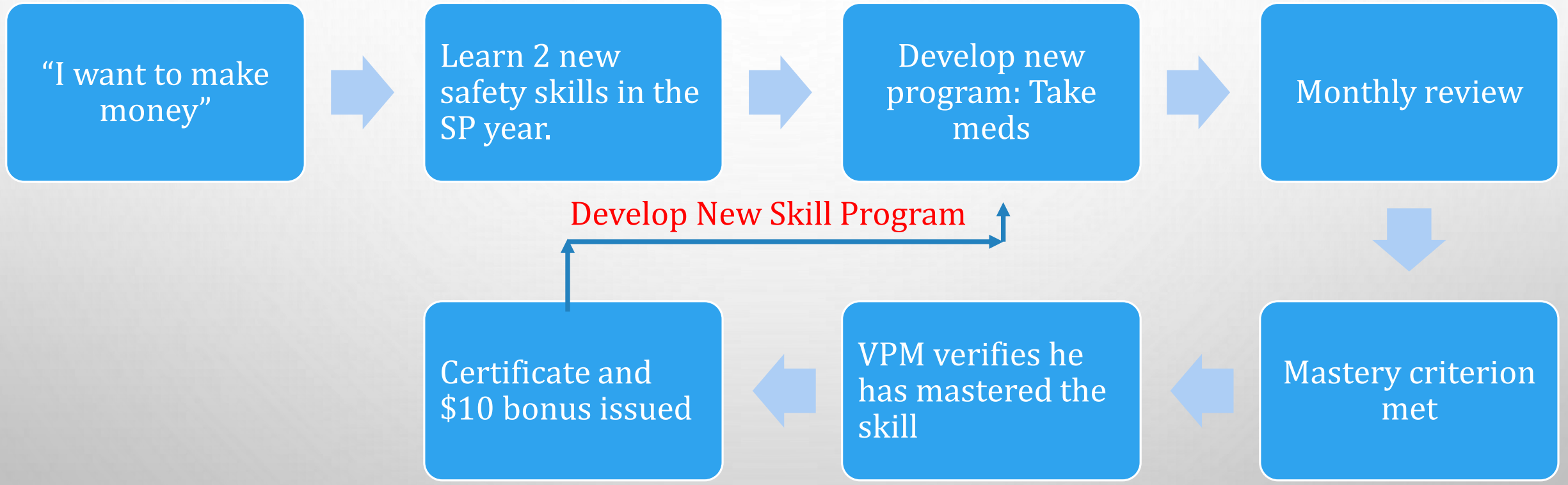
Some professions: Payment is for outcomes

ABA/OT/Speech: Payment is for service

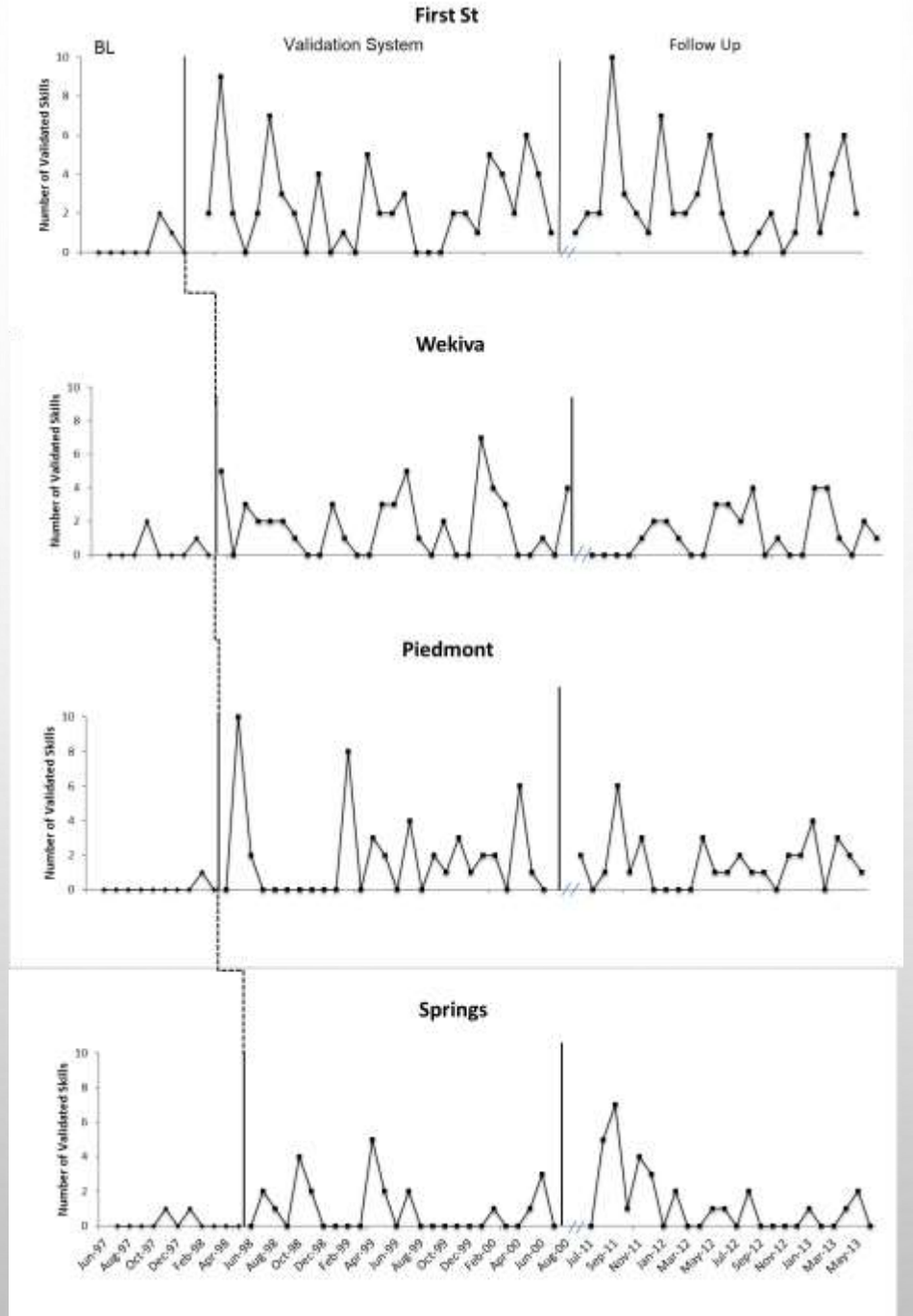
SKILL VALIDATION SYSTEM



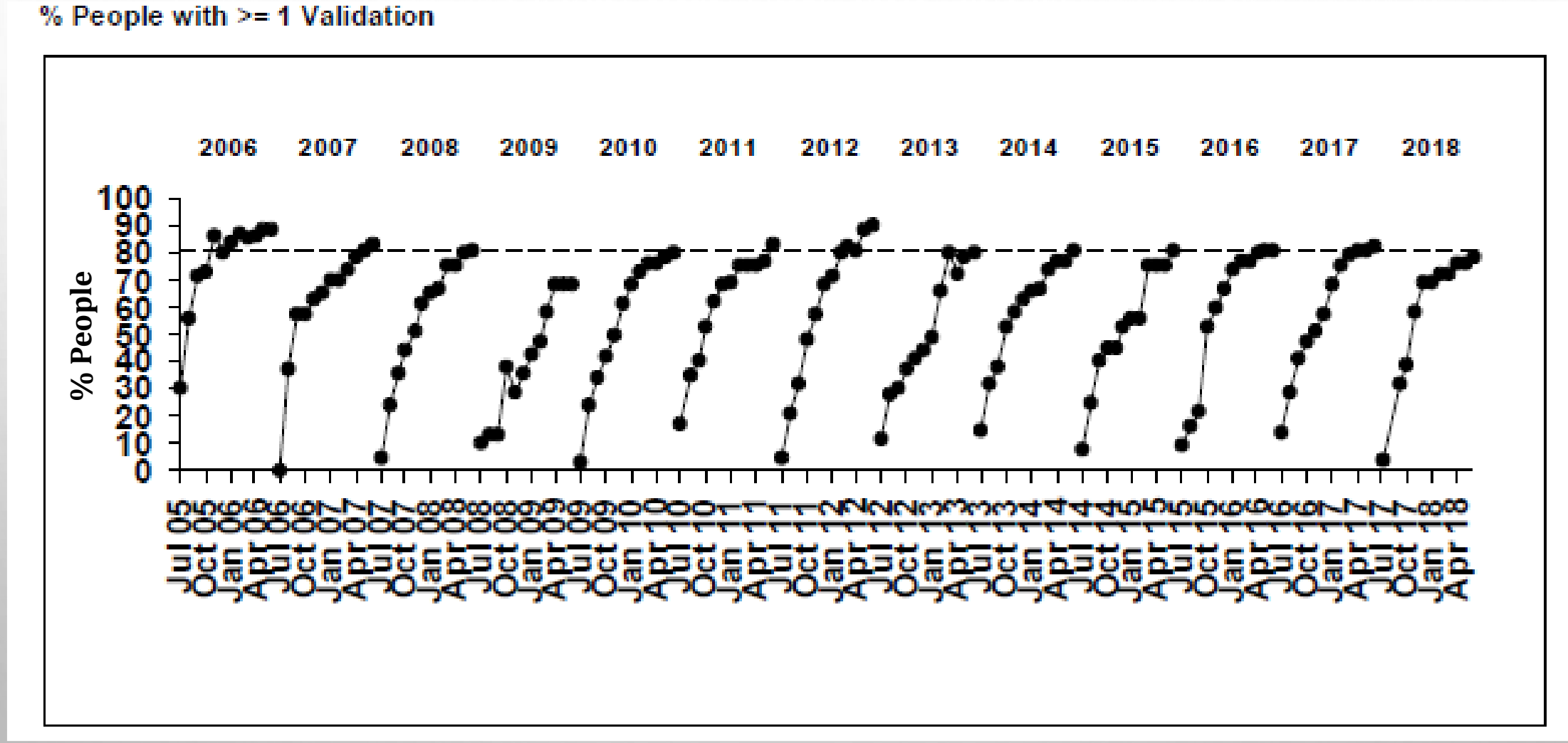
SKILL VALIDATION SYSTEM



RESULTS


First St
BL
Validation System
Follow Up
Number of Validated Skills
Wekiva
Piedmont
Springs
Jun-97
Aug-97
Oct-97
Dec-97
Feb-98
Apr-98
Jun-98
Aug-98
Oct-98
Dec-98
Feb-99
Apr-99
Jun-99
Aug-99
Oct-99
Dec-99
Feb-00
Apr-00
Jun-00
Aug-00
Jul-11
Sep-11
Nov-11
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13

OUTCOMES DATA TRACKING

- ✓Count # people with at least 1 new skill
- ✓Track and graph every month
- ✓Reset every fiscal year
- ✓Change system if data warrants a change

OUTCOMES DATA