

Applied Behavioral Health

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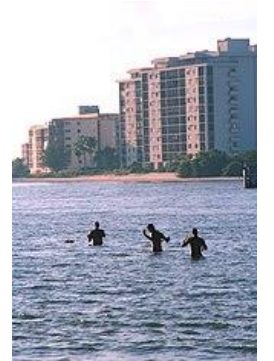


A bit about me...

- Illinois State University B.S. 1980 Music w psychology minor
- University of South Florida M.Ed. 1991 Ed. Leadership, School Administrator
 - Special Education, Emotional Disturbance, M.R., Learning Disabilities
- University of Central Florida Ed.D. 2005 Curriculum & Instruction (EBD)



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- FL Sunland ICF/MR DD Music Therapist 1983, Teacher 1985
 - FL Dept. of HRS Level III Professional in Behavior Analysis 1988
 - Florida Behavior Analyst 1993
 - Board Certified Assistant Behavior Analyst 2000
 - Board Certified Behavior Analyst 2007
 - Board Certified Behavior Analyst - Doctoral 2010



Enough about me...

- Undergraduate Special Education at MSU Billings is a double major - the only major of Sp. Ed. In Montana!
- ABA at Montana State University Billings
- Graduate Master's Degree is now fully Accredited by the Association for Behavior Analysis International
- 36-credit degree plan begins

Fall 2020 with NO GRE!

- *Institute for Neurodiversity and ABA*





Behavior is determined by its
consequences.

— *B. F. Skinner* —



This scientific principle drives our understanding of function and behavioral contingencies and those that increase or decrease the likelihood of future behavioral responses.

Applied Behavior Analysis is Effective

“Thirty years of research demonstrated the efficacy of applied behavioral methods in reducing inappropriate behavior and in increasing communication, learning, and appropriate social behavior.”

--in Mental Health, U.S. Surgeon General

“The effectiveness of ABA-based intervention in ASDs has been well documented through 5 decades of research by using single-subject methodology”... “

--American Academy of Pediatrics

“In addition to using sound principles, entry into intervention programs as soon as an autism spectrum diagnosis is seriously considered is important. There is a substantial amount of research validating the effectiveness of Applied Behavior Analysis.”

--National Research Council



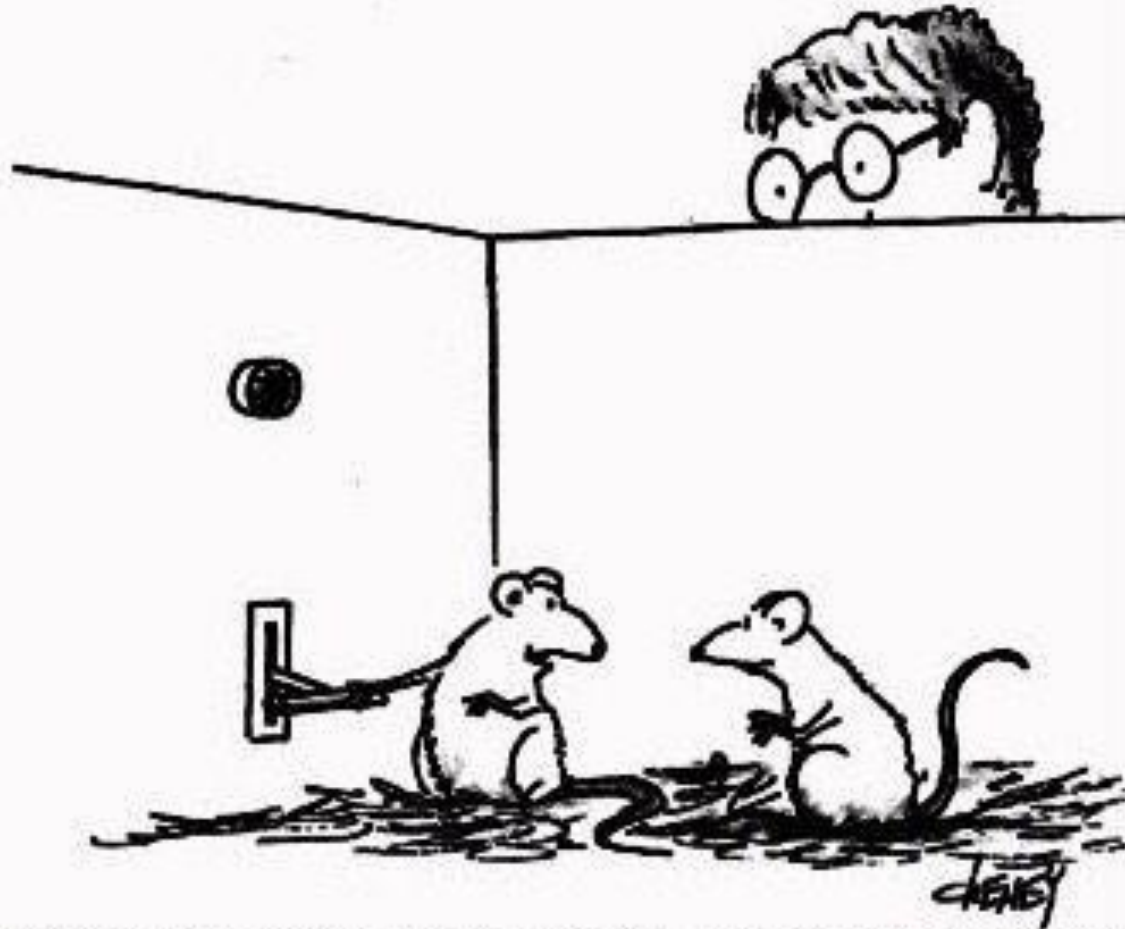
What is *Applied*?

Basic: Animal behavior analysis (rats, pigeons, etc.) and human behavior but not for purposes of social significance.



Applied: Human behavior analysis is **ALWAYS** conducted to change only those behaviors that are of meaningful, with high value and social significance.

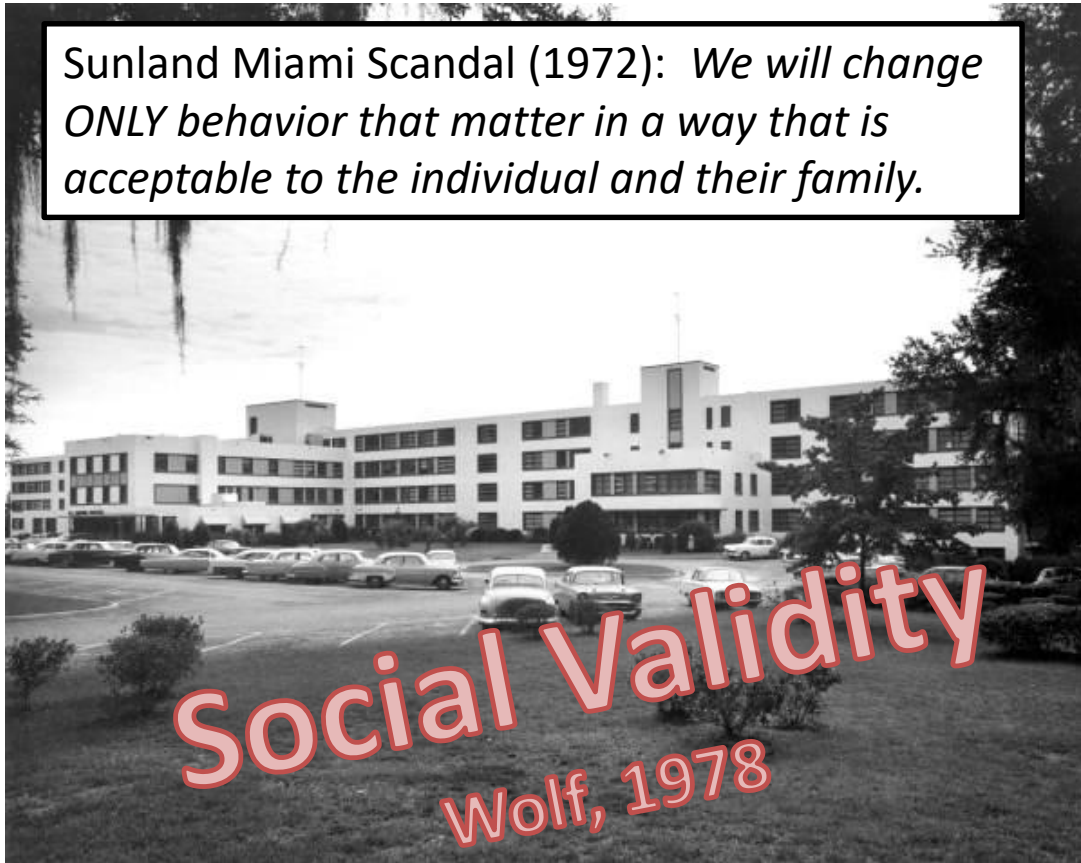




It's a rather interesting phenomenon. Every time I press this lever, that post-graduate student breathes a sigh of relief.

“Applied” brings an element of Ethics

Sunland Miami Scandal (1972): *We will change ONLY behavior that matter in a way that is acceptable to the individual and their family.*



Right to Effective Behavioral Treatment
Van Houten, et al., 1988



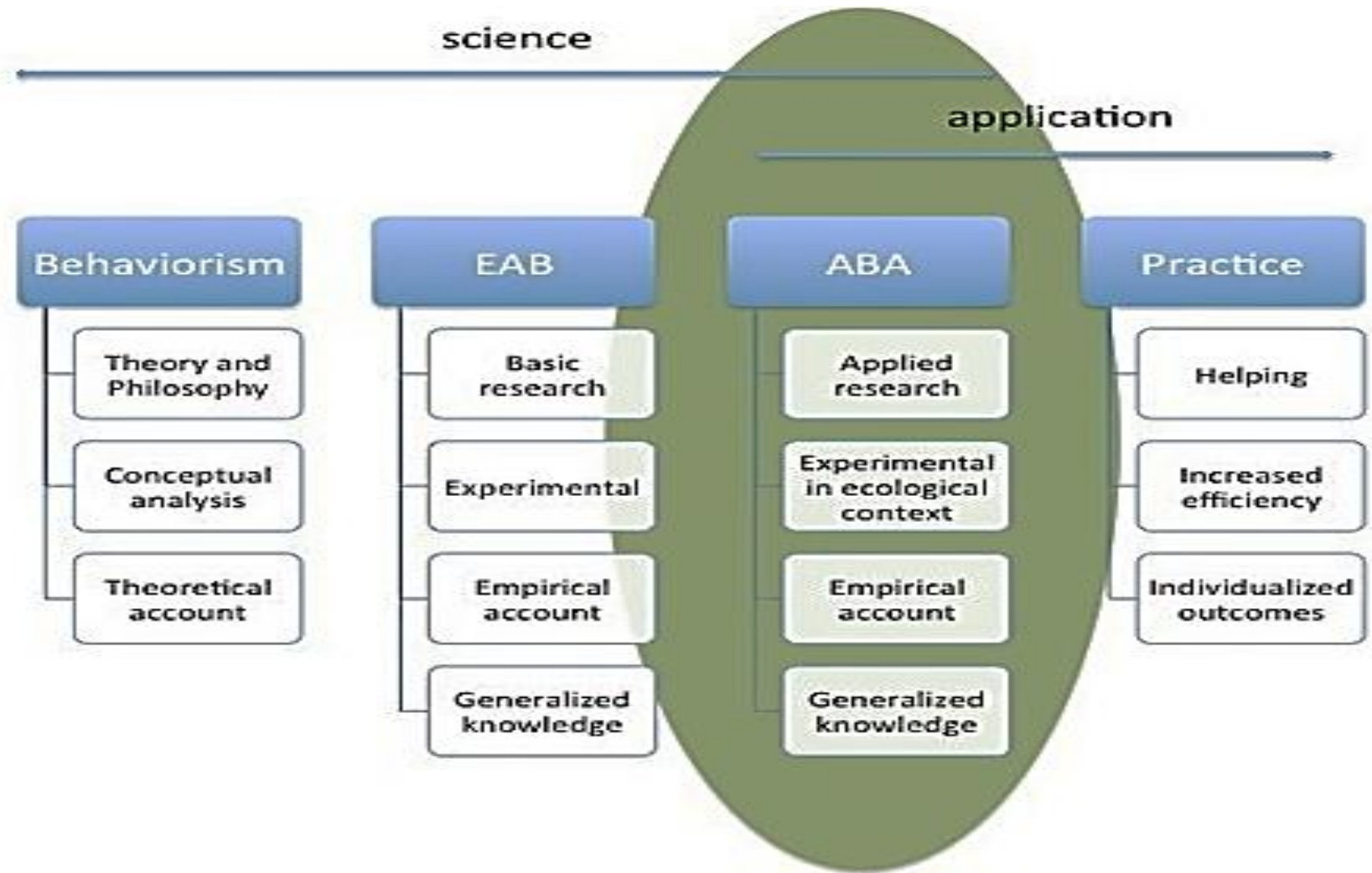
ABA is Technological

- The written description of procedures in ABA is so clear that someone else can easily replicate the procedures.
- Technological innovations include
 - fidelity instruments (implementation checklists)
 - reliability measures (inter-observer agreement)



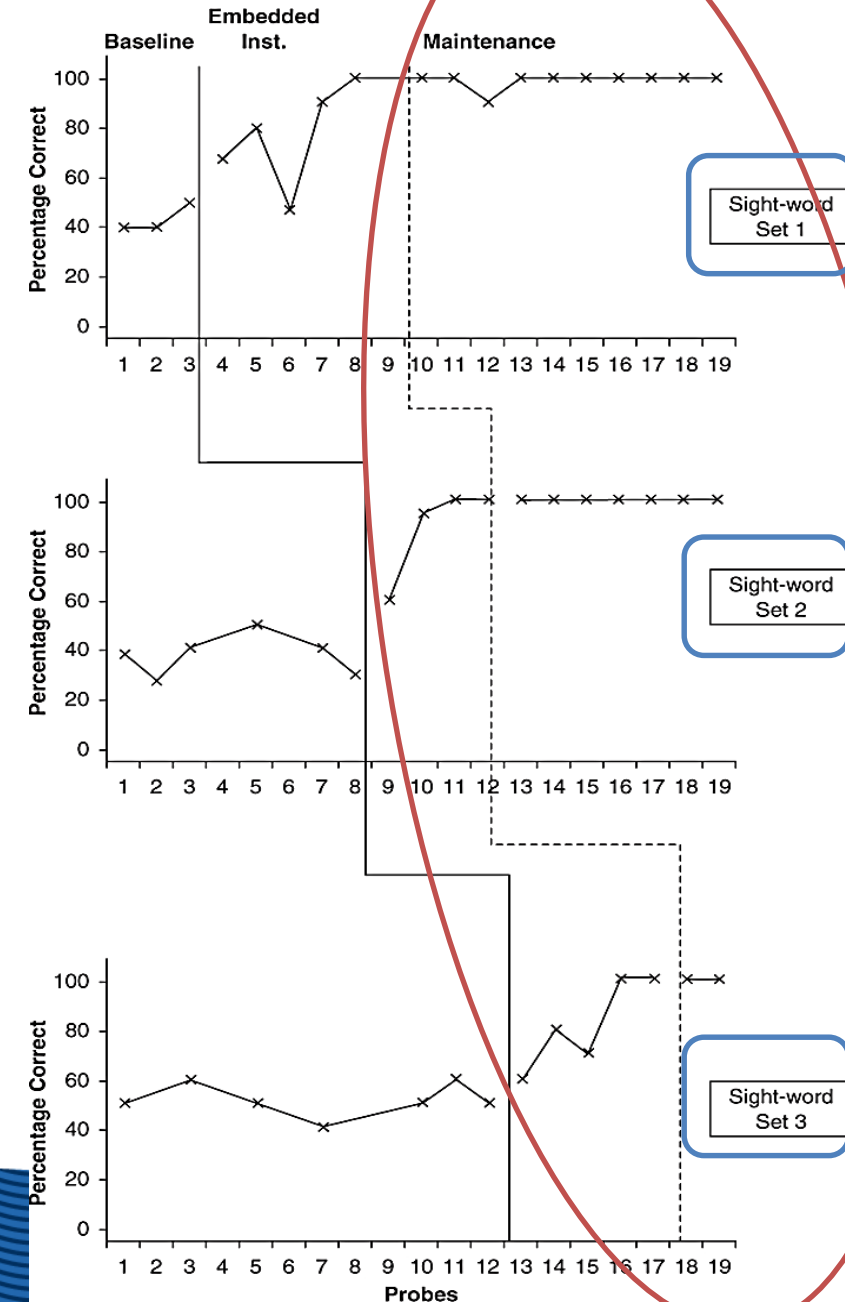
Conceptually Systematic

This refers to the “Theory-to-Practice” element and the adaptability of ABA across disciplines.



Generality

- Durable, long-lasting interventions that maintain over time (maintenance phase)
- Behavior change that is seen across settings, people, and to other materials.



Baer, Wolf, & Risley (1968)

Some Current Dimensions of Applied Behavior Analysis

- **Applied** - meaningful behavior change for the individual
- **Behavioral** - incorporates science of behavior
- **Analytic** - experimental research and demonstrations
- **Technological** - accurate descriptions for replication
- **Conceptual** - follows the system where it is used
- **Effective** - will make noticeable changes
- **Generality** - durable over time in a variety of settings



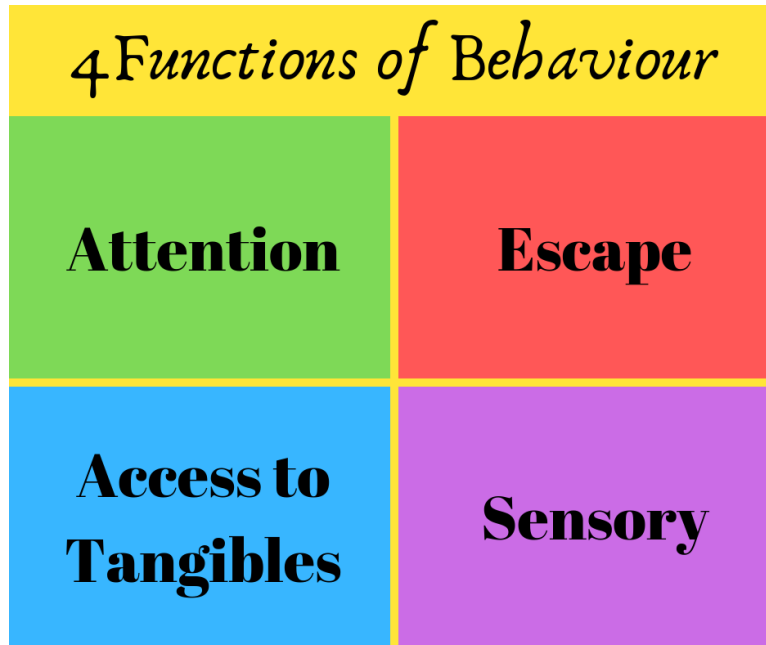
Applications of ABA

- Autism Treatment & Related Disabilities
- Verbal Behavior/Functional Communication
- Severe behaviors (e.g., self-injury, aggression, epilepsy, etc.)
- Regular Education (Direct Instruction, Precision Teaching)
- Organizational Behavior Management
- Environment/Sustainability Practices
- Fitness, Personal Health & Wellness
- Applied Behavior Animal Training
- Security, Criminal Investigations, Crisis Intervention



Why ABA is Different...

Focus on Function



“Blanket” Interventions



Other reasons ABA is different...

- Setting, Motivation, and feasibility are considered prior to implementing a plan (includes trauma experiences)
- However, antecedents are less important than **consequences** in planning and analysis (increase/decrease)
- Constant checking and ‘tweaking’ during implementation
- Analysis of operational procedures, reliability & fidelity
- Data matters - no opinions allowed

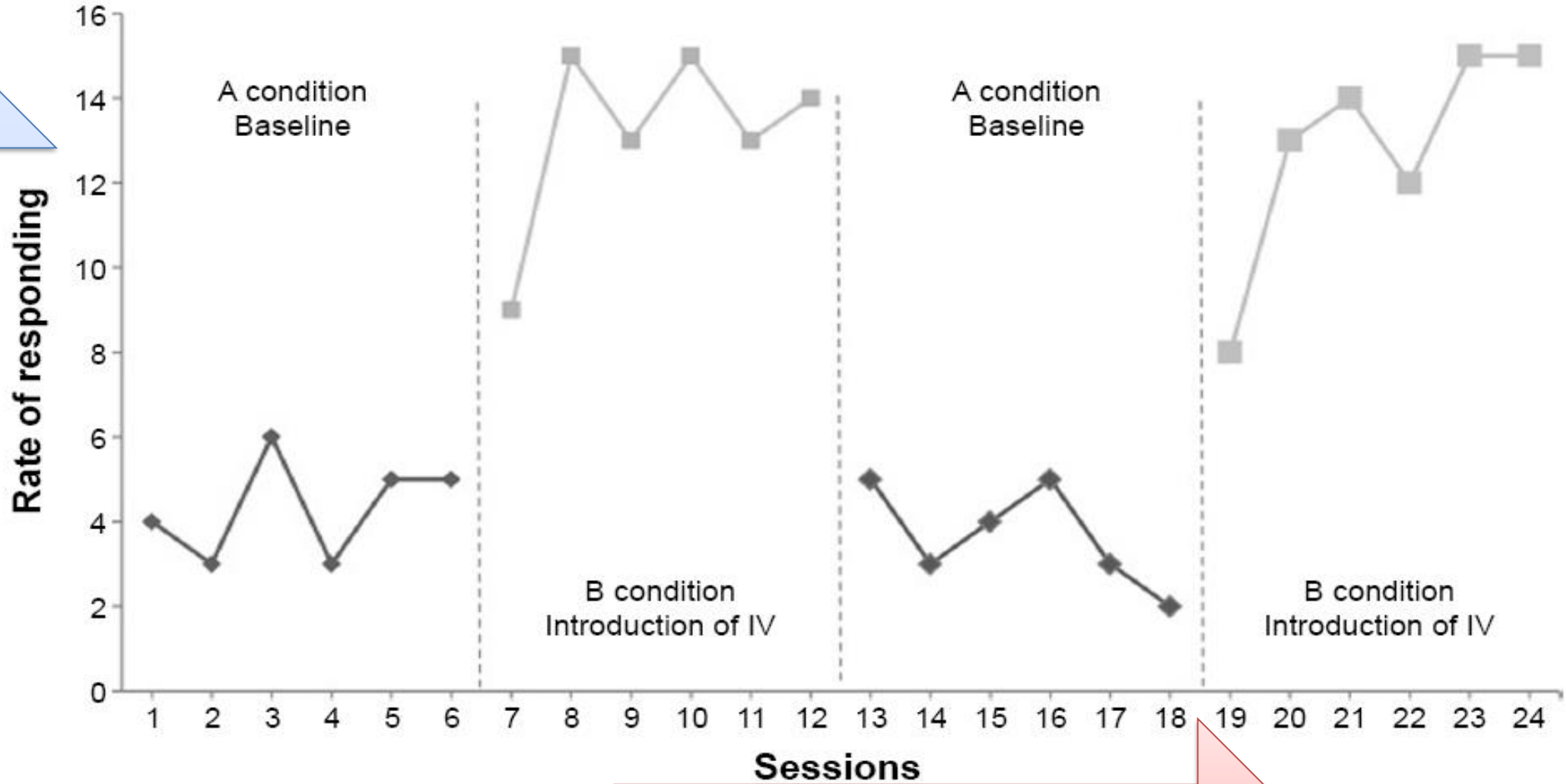


ABA Case Conceptualization

- Determining Need
 - Physician Referral
 - Records Review
- Behavioral Assessment
 - Identify strengths
 - Identify Preferences
 - Define Goals
 - Prioritizing Goals
 - Conduct FBA/FA *
- Write Treatment Plan
 - Use scientifically validated, evidence-based practices
 - Link to assessment and functional analysis (consequence-based)
- Supervise, progress monitor & updated plan as needed daily or weekly
- Evaluate treatment plan as indicated by provider.

Visual Displays of Data

Treatment Scale goes up
(Frequency, Duration, etc.).



Time goes across the X axis Left to Right
(days, sessions, etc.)



Image from Dove Medical Press,
Norway University

Standards: Kratochwill, et al. (2010)

Example Reversal Design

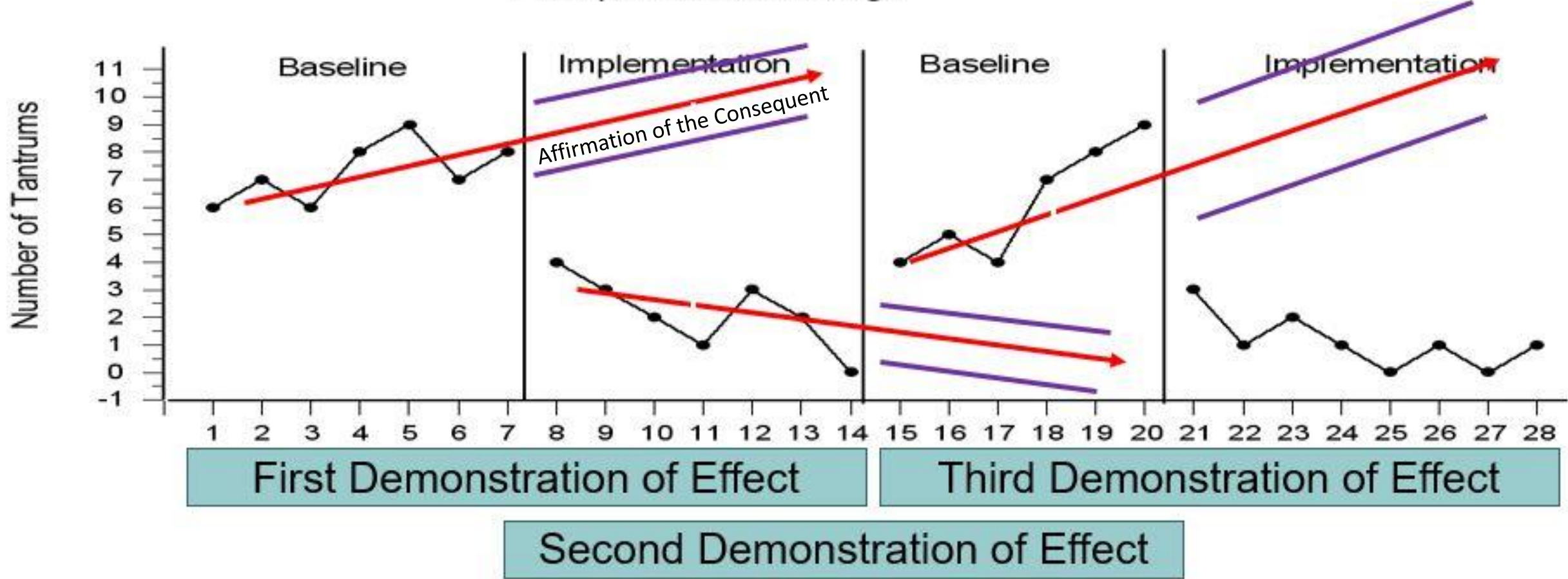


Image courtesy Horner (2010).

Professional Practice

- BCBA-D: Has ABA doctoral dissertation w/coursework, BCBA
- BCBA: Master's degree, 1500 hours of supervision, Exam
- LBA: Licensed Behavior Analyst (BCBA plus 100 hours, etc.)

- BCaBA: Bachelor's degree, 1000 hours of supervision, Exam
- LABA: Licensed Assistant Behavior Analyst (BCaBA)

- RBT: High School plus training and Exam

Standards are changing in 2020 to 2,000 hours



Time for questions?

Case Studies - ABA in my Practice

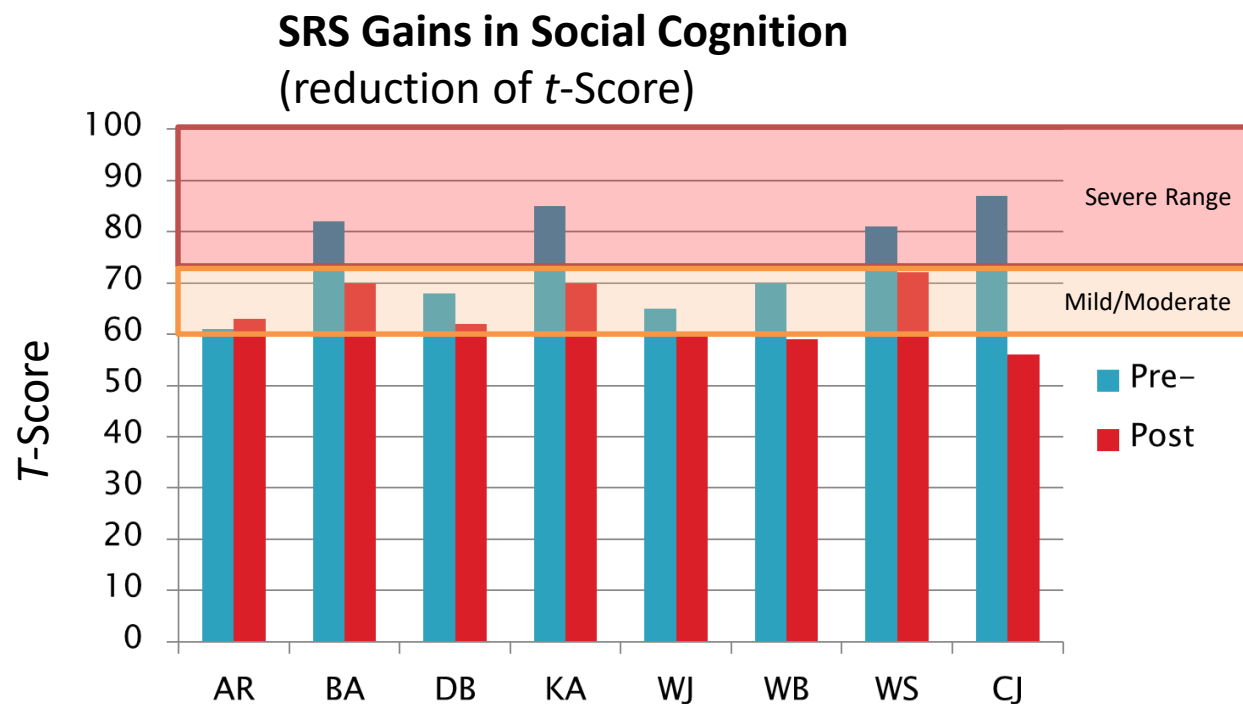


ABA in my practice (1)

- **Nebraska Study** with Munroe Meyer Institute AmeriCorps funding for 3 Research Assistants (1 GA, 2 UG) over the course of 15 weeks (parent interview at beginning and end).
- **Participants** were 8 children and youth with Autism Spectrum Disorders (ages 5 to 18)
- **Multiple Component Package Treatment Design**
 - Simultaneous social skills discrete trial instruction and weekly parent interview (parent watched session)
 - Social Autopsy/Social Behavior Mapping Activity based on parent input from the immediate interview (something happened recently)
 - Behavior Skills Training, Role-play, Feedback
 - Homework and discussion with parent
 - One culminating social activity (paired with another participant) for generalization assessment
- **Research Goal:** Design an effective method for developing social communication (reciprocity)
 - Control measure (Pre- and Post-Test): Piers-Harris Self-Concept Scale
 - Pre- and Post-Test Normative: (t -Test) Social Responsiveness Scale
 - Pre- and Post-Test Curriculum-Based: Bellini Social Skills Profile
 - Qualitative responses from parent interviews (pre- and post-)



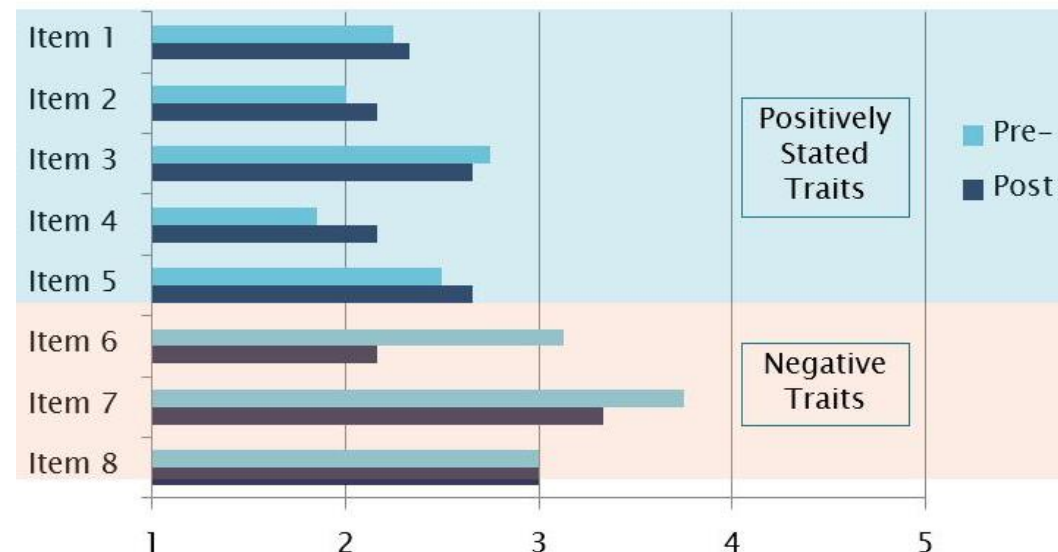
Results (1)



Walsh Test for nonparametric samples (Siegel, 1956),
results were significant to $p < .001$



Curriculum-Based Measurement Gains



Control: Piers-Harris Scores did not change with the exception of one participant, age 13 whose social awareness scores were most significantly affected.

Culminating Activity: Successful participation with exception of 17 and 19 year-old participants.

ABA in my Practice (2)

- Graduate Student in MSSED/ABA, Co-Author, Billings
- **Participants:** 5 children 9-10 years old (Emotional Disturbance, OHI, LD) Medical Diagnoses: ADHD (3), PDD-NOS (1), FAE (1)
- **Setting:** Elementary School, Delta Classroom, Small Group Reading
- **Dependent Variable:**
 - Maladaptive (not-tracking, off-task, fidgeting)
 - Active Learner behavior (sit-up, lean-in, track with eyes, pencil-to-paper, point to read).
- **Independent Variable:** Video-Modeling, self-modeling & review



Results

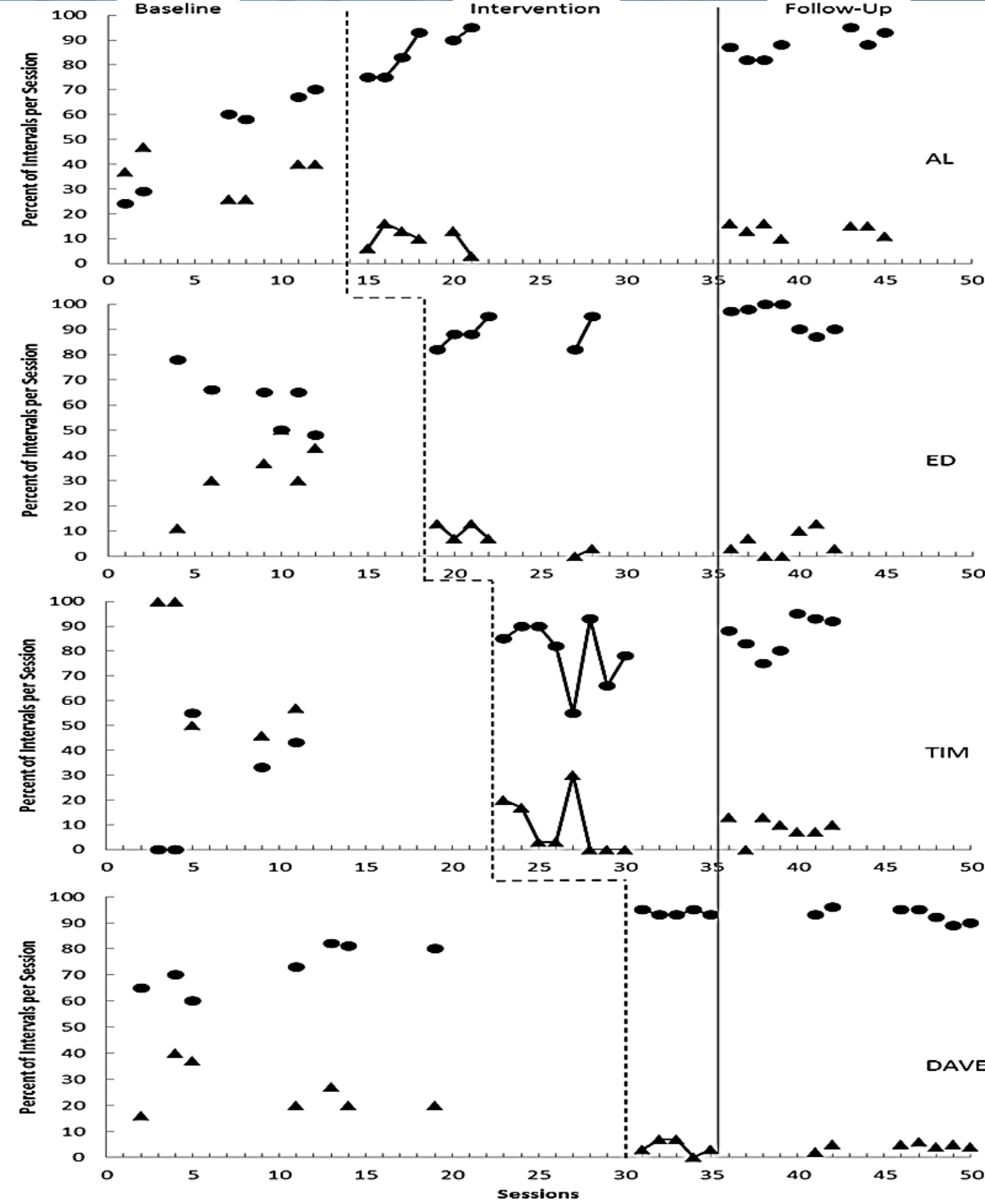
- Goals of this study were:
 - Decrease maladaptives (▲)
 - Increase active learner (●)
- Percent of non-overlapping data (PND)
 - PND Increasing 97%
 - PND Decreasing 92%
- 6-week post intervention follow-up: Active learner behaviors were maintained.

Emotional and Behavioural Difficulties, 2014
<http://dx.doi.org/10.1080/13632752.2014.949988>



Using video self-modelling to increase active learning responses during small-group reading instruction for primary school pupils with social emotional and mental health difficulties

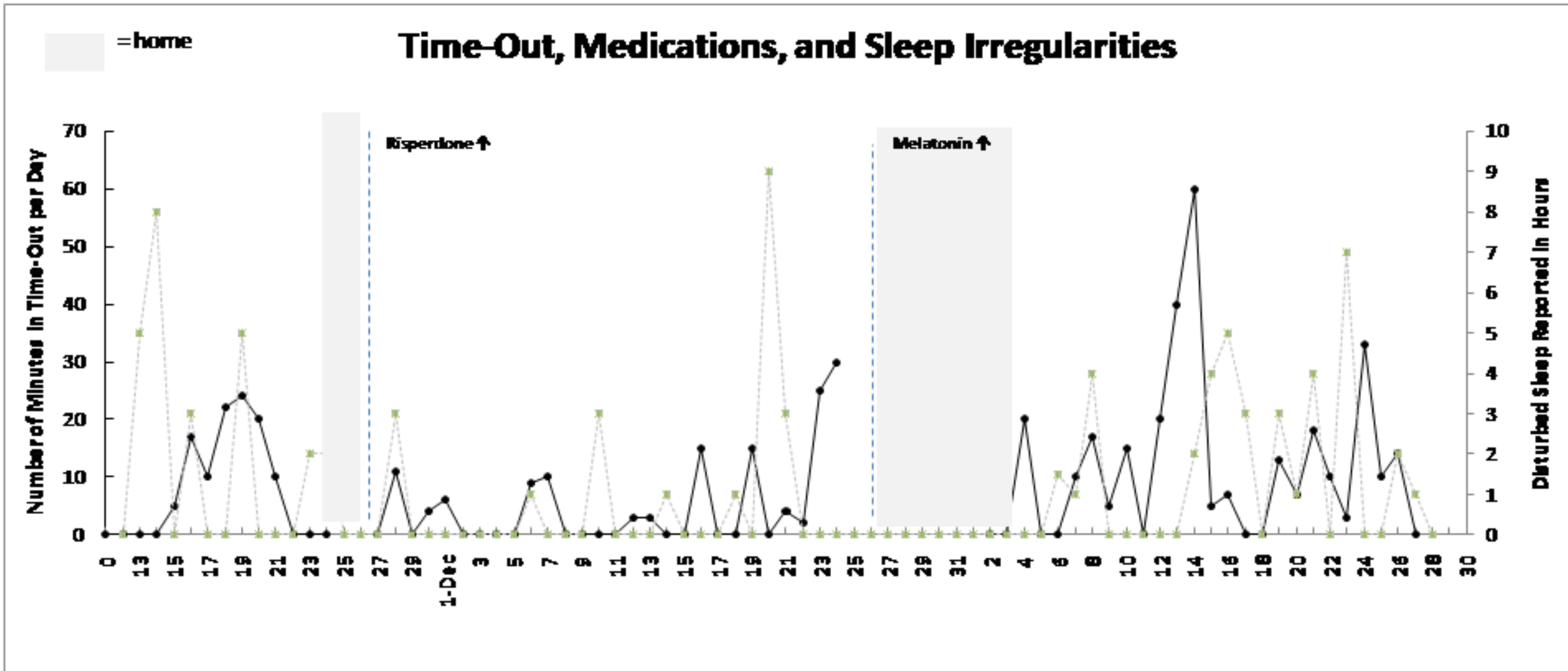
Cheryl A. Young-Pelton^{a*} and Samantha L. Bushman^b



ABA in my Practice (3)

- Consultation with psychiatrist RE: client medication and behavioral changes
- **Participant:** Individual with ASD related symptoms and severe sleep irregularities.
- **Dependent Variable 1:** Left axis compares problem behavior recorded by daytime staff (# min. in time-out)
- **Dependent Variable 2:** Right (gray data path) axis shows disturbed hours of sleep.
- Phase change lines indicate medication changes (gray=home).

ABA in my Practice (3)



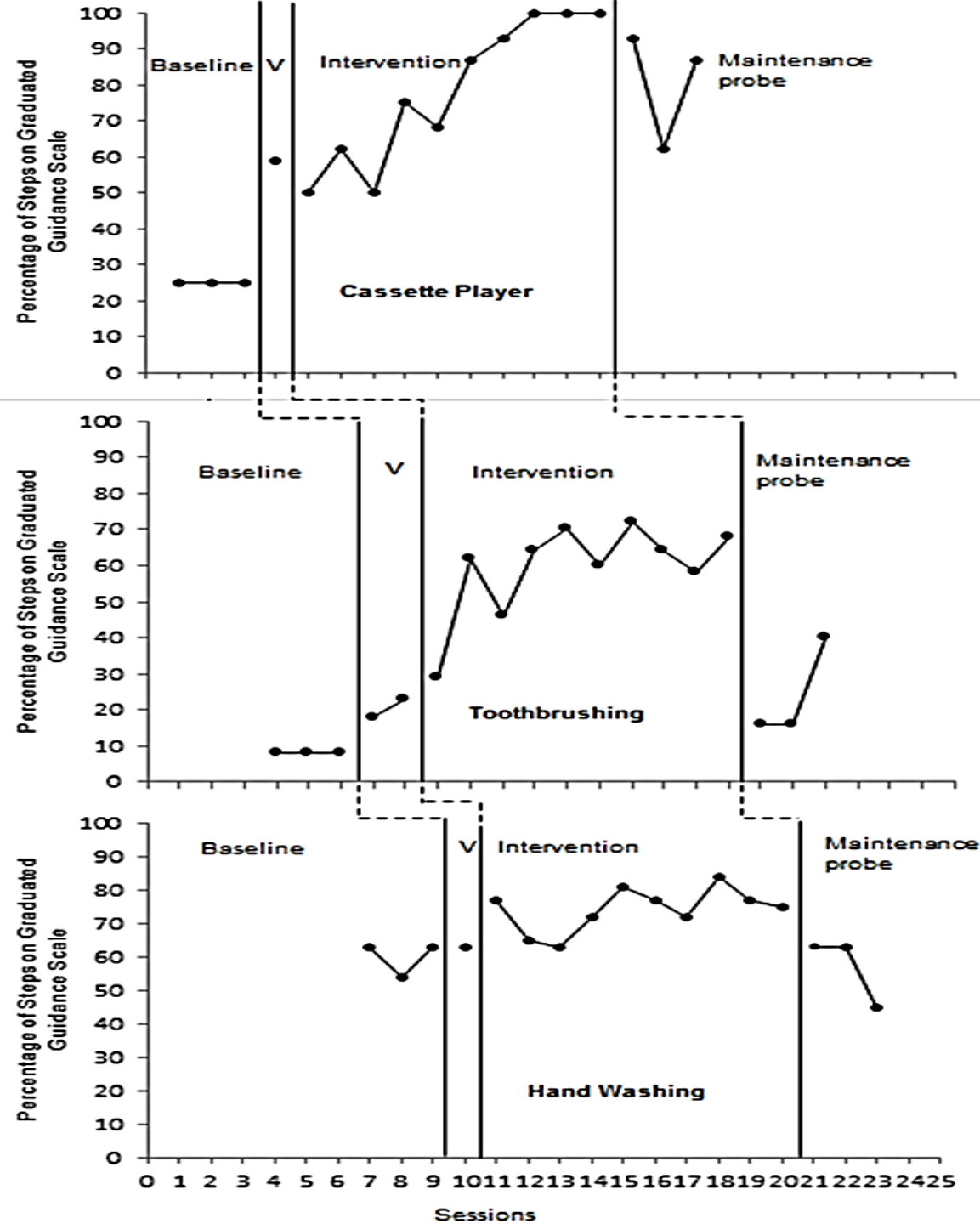
ABA Program Feature (1)

- Graduate Student in MSSED/ABA, in Missoula MT
- **Participant:** 8 year-old boy with ASD
- **Dependent Variable:** Use cassette player, wash hands, brush teeth
- **Independent Variable:** Video Self-Modeling of a chaining procedure using least-to-most prompting
- **Multiple baseline design** across three behaviors

ABA Program Feature (1)

- Results:
 - Video-Training (v) phase successfully started an increasing trend in the first two behaviors, but Kevin did not like hand washing and that made a difference.
 - The cassette recorder had a natural consequence, which was to enjoy music as a result.
 - PND was 77% as intervention.
- Maintenance was only effective when motivating operation may have evoked behavior. Toothbrushing and hand washing may have had an abative effective on motivation.

@ Abby Dawson, 2014

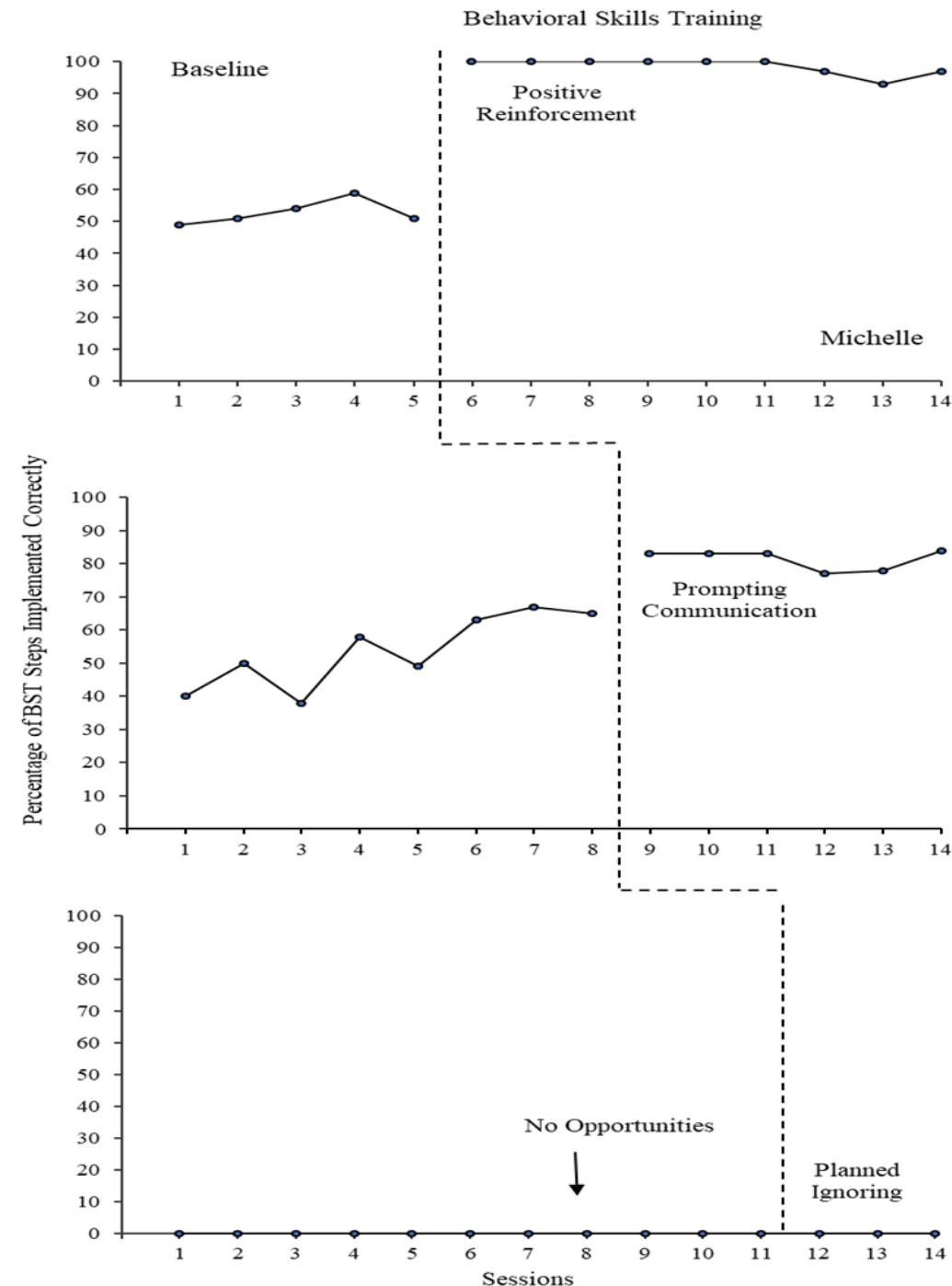


ABA Program Feature (2)

- Graduate Student in MSSED/ABA, Billings
- **Participants:** Two parent and child dyads (ASD, ADHD) and children exhibit challenging behavior
- **Dependent Variables:** Parent interactions with children were observed demonstrating three behaviors: (a) Positive Reinforcement, (b) Prompting Communication, and (c) Planned Ignoring.
- **Independent Variable:** Behavioral Skills Training (instruction, modeling, role-play, feedback).

ABA Program Feature (2)

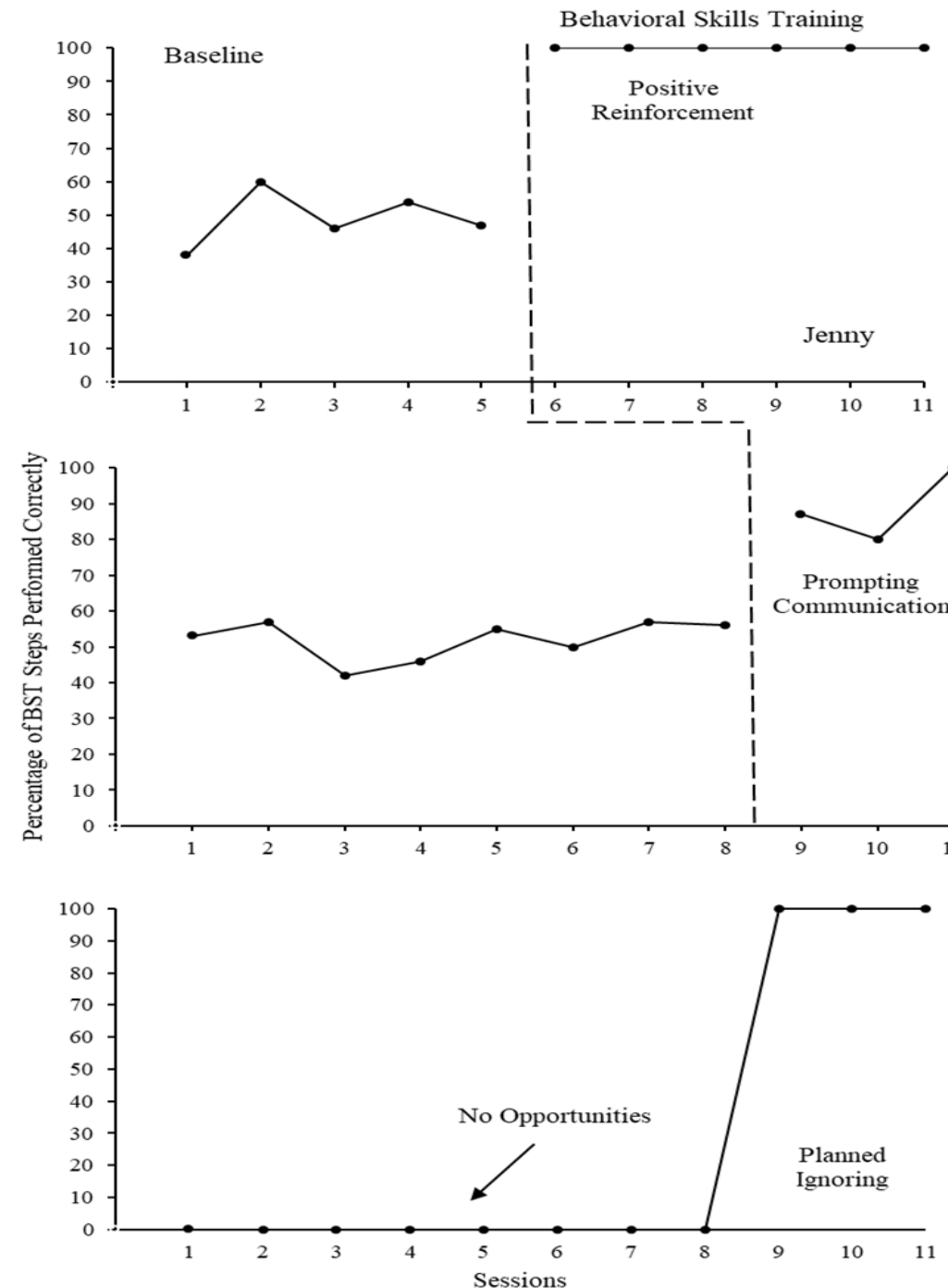
- Video recording of 33% of sessions, Interobserver agreement at 94%.
- Results of Dyad 1:
 - Positive reinforcement
 - Prompting communication
 - Planned ignoring (no opportunities)
- Caregiver adherence and involvement in everyday aspects of the child's behavior plan may improve the overall effectiveness of the plan.



ABA Program Feature (2)

- Video recording of 33% sessions, Interobserver Agreement at 100%
- Results of Dyad 2:
 - Positive Reinforcement - to 100%
 - Prompting Communication - Var.
 - Planned Ignoring - spontaneous use of planned ignoring (no BST)
- Motivation to use procedures or not to use procedures influenced the probability of adherence and increased parental adherence to the child's overall plan.

@Stephanie McDonald



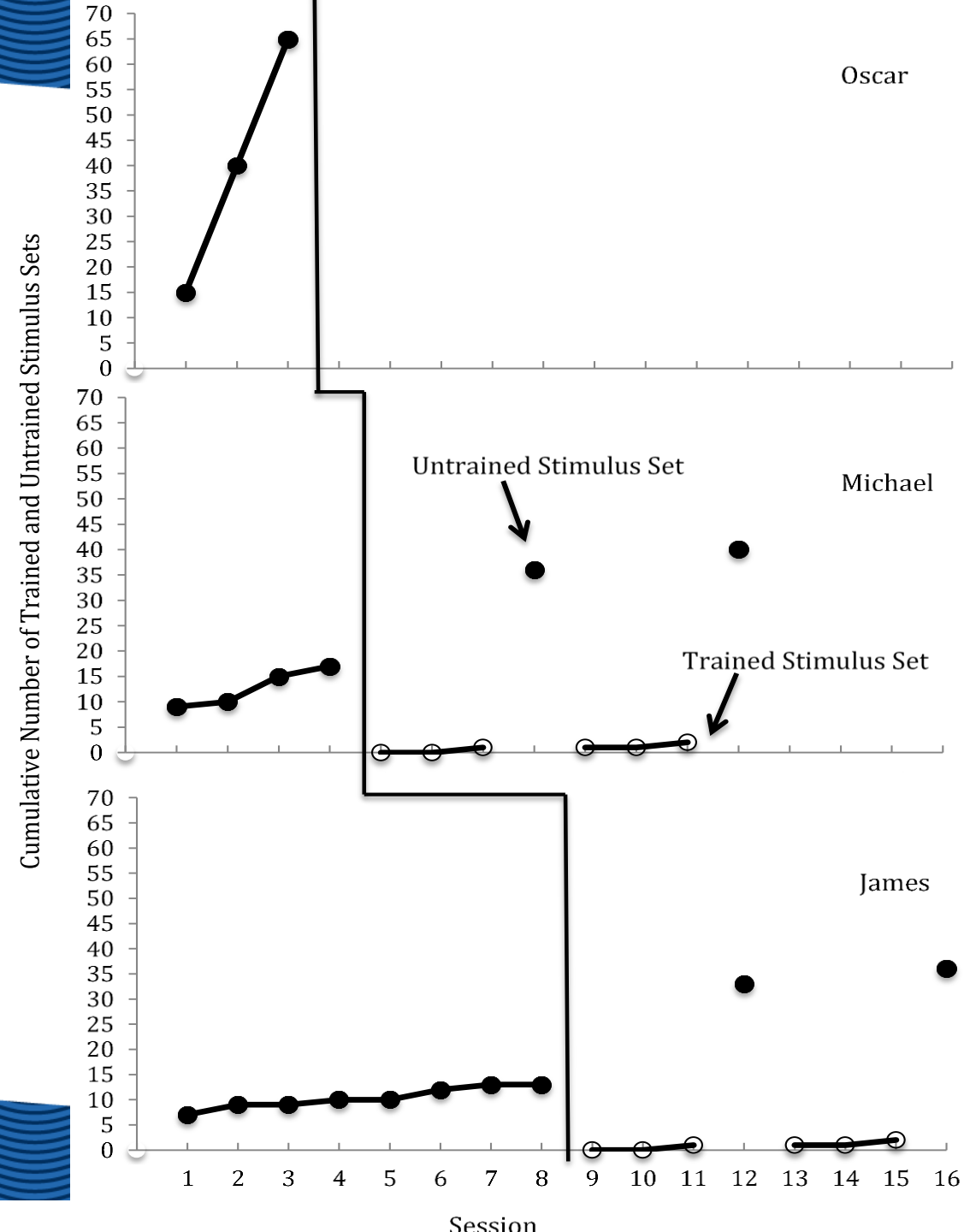
ABA Program Feature (3)

- Graduate student in MSSED/ABA, Dubai UAE
- **Location:** Carbone Clinic, Healthcare City
- **Participants:** 2 boys with ASD, 1 boy with PDD-NOS
- **Dependent Variable:** Reporting the missing picture from an array after 15s delay (tallied in stimulus sets).
- **Independent Variable:** Joint Control Training (gesture/tact to picture, self-echoic), a Verbal Behavior procedure aimed at mediating the absence or delay of echoic skills in children with delays.

ABA Program Feature (3)

- **Competency** (fidelity to treatment) for three participants was 98% for both James and Michael, and 100% for Oscar.
- **OSCAR**: On the 2nd and 3rd day of baseline he correctly reported missing items in 25 out of 25 sets and was removed from the study.
- **Closed circles** are data points for untrained stimulus sets. **Open circles** are data points for trained stimulus sets.
- Michael and James had successful outcomes, both acquiring two trained stimulus sets and 23 untrained stimulus sets across eight joint control training sessions.
- Joint-control training was able to mediate correct responses of the item that was missing from an array of pictures.

@Sydney Brinkerhoff



Applied Behavior Analysis and Telehealth

- Currently not a client provision in Montana except for supervision purposes. MT Board of Psychologists - Not allowed.
- HIPAA requirements must be met (HRSA, 2013).
- **Wacker et al. (2013):** Parent training in FA and FCT showed a cost-savings of \$58/wk. compared to \$355
- **Lindgren et al. (2015):** Parent training in FA and FCT resulting in overall avg. \$3,800 cost-savings between in-home therapy and home telehealth. **“Because telehealth can provide research-based ABA treatment to any family with access to the Internet, barriers to providing access to ABA can be reduced, especially for rural and underserved families.”**

Lindgren, et al. (2016). Telehealth and Autism: Treating Challenging Behavior at Lower Cost. *Pediatrics*, 137 (S2).



For more
information

<https://www.hrsa.gov/sites/default/files/publichealth/guidelines/BehavioralHealth/behavioralhealthcareaccess.pdf>

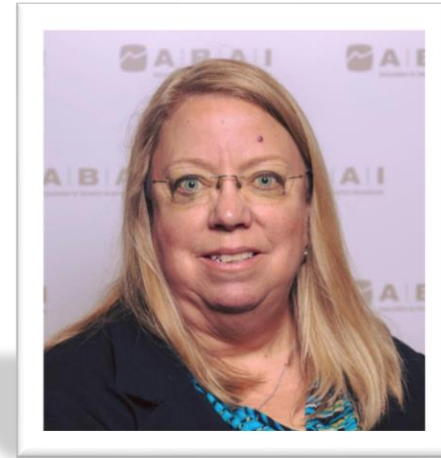


*Coverage applies to certain health services.



ABA In Summary...

- Socially valid behaviors
- Scientific principles & experimental processes
- Technologically precise
- Analytical in every way
- Useful in many contexts
- Effective results; significant
- Behavior change is long lasting and generalizes



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Thank you!