ENDICOTT COURSE

Developing and Implementing Successful Behaviorally Based Social Skills for Individuals Diagnosed with Autism

Justin B. Leaf, Mitchell Taubman, John McEahin, Ronald Leaf, Misty Oppenheim-Leaf, and Derek Ponce
Autism Partnership Foundation
RETRIEVAL

• Go To:
  • [http://www.autismpartnership.com/conferences](http://www.autismpartnership.com/conferences)
• Scroll Down for Dr. Justin Leaf Presentations
• Title of Talk: NAC
• Password: NAC (All CAPS)
• Email: Jblautpar@aol.com

MY HISTORY
MY HISTORY

AUTISM PARTNERSHIP FOUNDATION

ORGANIZATION FOR AUTISM RESEARCH
WHAT ARE YOUR LONG TERM EXPECTATIONS?

THESE ARE MINE

SOCIAL DIAGNOSTIC CRITERIA FOR AUTISTIC DISORDER

• Marked Impairment in the Use of Multiple Nonverbal Behaviors (e.g., Eye-to-Eye Gaze, Facial Expression, Body Postures, Gestures)
• Failure to Develop Peer Relationships Appropriate to Developmental Level
• Lack of Spontaneous Seeking to Share Enjoyment, Interests, or Achievements with Other People
• Lack of Social or Emotional Reciprocity
WHY ARE TEACHING SOCIAL SKILLS IMPORTANT?

- Promote Language
- Improve School Performance (Ladd et al., 1999)
- Peer Approval (Bauminger & Kasari, 2000)
- Formation of Friendships (Bauminger & Kasari, 2000)

FRIENDSHIPS IN ASD

- Bauminger & Kasari (2000)
  - Compared ASD to Typically Developing Children
  - Utilized Friendship Qualities Scale
  - Children reporting have friendship
  - However Lower Quality
- Bauminger & Shulman (2003)
  - Mothers perception
  - High Functioning ASD vs Typically Developing
  - Reported Friendships Across Both Groups
  - ASD had fewer number, duration, and frequency
FRIENDSHIPS IN ASD

  - Investigated 235 Adolescents and Adults with ASD
  - Low Quality of Friendships

WHY ARE TEACHING SOCIAL SKILLS IMPORTANT?

- Promote Language
- Improve School Performance (Ladd et al., 1999)
- Peer Approval (Bauminger & Kasari, 2000)
- Formation of Friendships (Bauminger & Kasari, 2000)
- Reduced Loneliness and Depression
- Reduce Thoughts or Attempts of Suicide
- Quality of Life
WHY ARE SOCIAL SKILLS NOT A PRIORITY?

• “Students With ASD Aren’t Social”
• Academic & Language Priorities
• Individuality
• “We Aren’t Social Ourselves”
• Interventionists Have Poor Social Skills
• It is Extremely Difficult to Teach

FRIENDSHIP ALGORITHM
WHY ARE SOCIAL SKILLS NOT A PRIORITY?

- “Students With ASD Aren’t Social”
- Academic & Language Priorities
- Individuality
- Limited Social Curriculum
- “We Aren’t Social Ourselves”
- Interventionists Have Poor Social Skills
- It is Extremely Difficult to Teach
EMPIRICALLY BASED INTERVENTIONS

• Non Empirically Based or Little Empirical Evidence
  • Social Thinking
  • Social Stories (Gray & Garand, 1993)

• Empirical Evidence
  • Video Modeling (Apple, Billingsley, & Schwartz, 2005)
  • Script Fading (e.g., Krantz & McClannahan, 1998)
  • Peer Mediated Interventions (e.g., Goldstein, Schneider, & Theiman, 2007)
  • Discrete Trial Teaching (e.g., Leaf & McEachin, 1999)

SOCIAL SKILLS GROUPS

• Overview
  • An Opportunity For Three or More Children to Come Together and Simultaneously Learn Social Behaviors

• Advantages
  • Effective
  • Peers in Close Proximity
  • Efficient
  • School Readiness
LEVELS OF EVIDENCE

- Years of Clinical Experience
LEVELS OF EVIDENCE

• Years of Clinical Experience
• Descriptive Analysis
  • Leaf et al., (2012)
  • Sartini, Knight, & Collins (2013)
• Single Subject Designs
  • Barry et al., (2003)
  • Ferguson, Gills, Sevlever (2013)
• Group Designs
  • DeRosier, Swick, Davis, McMillen, & Matthews (2011)
  • Laugeson, Frankel, Gantman, Dillon, & Mogil (2012)

META ANALYSIS/REVIEWS

• White, Koenig, & Scahill (2007)
  • “A consistent result in the evaluation of group delivered intervention to promote social reciprocity in children with PDDs is that outcome data are inconclusive”
• Rao, Beidel, & Murray (2008)
  • “… Despite its widespread clinical use, empirical support for social skills training (SST) programs for children with AS/HFA is in its infancy”
• Reichow & Volkmar (2010)
  • “Because social abilities are hindered in all individuals with ASD regardless of functioning level, more research needs to be conducted…”
META ANALYSIS/REVIEWS

• Cappadocia & Weiss (2011)
  • “Clearly, larger sample sizes and more controlled methodological designs are required to assess the effectiveness of SSTGs.”
• Kaat & Lecavalier (2014)
  • “… more work is necessary before firm conclusions regarding the efficacy of SST can be made.”

AREAS OF NEED

• Randomized Control Group Study
• “Higher” Functioning Participants
• Younger Children
• Comprehensive Assessments
• Blind Evaluators
• Generalization
• Long Term Maintenance
PURPOSE OF THIS STUDY

- To Address These Areas of Need
- Using a Randomized Control Trial
- Evaluating a 16 week (32 session) Behaviorally Based Social Skills Group For High Functioning Individuals Diagnosed with ASD
METHODS & RESULTS

GENERAL SET UP

RECRUITMENT

INTERVIEW
INCLUSION CRITERION

• No Previous History
• Independent Diagnosis
• Low Level of Stereotypic Behaviors
• IQ score of 80 at Intake
• Age Appropriate
  • Expressive Language
  • Receptive Language

INTERVIEWS

• Structured Interview
  • 20 Minute Interview
  • Two Teachers Present at All Times
  • Another Child Came to Interact When Possible
• Characteristics
  • Lack of Aberrant Behavior
  • Speak in Full Sentences
  • Answer Open-Ended Questions
  • Interacted with Teacher or Peer For a Long Duration
## GENERAL SET UP

- **RECRUITMENT**
- **INTERVIEW**
- **GROUP A**
- **GROUP B**

## PARTICIPANT OVERVIEW

<table>
<thead>
<tr>
<th>Domain</th>
<th>Group A</th>
<th>Group B</th>
<th>P Value</th>
<th>Significant Difference</th>
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<td>Average IQ Score</td>
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<td>105.7</td>
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### SOCIAL SKILLS GROUP TEACHERS

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<tr>
<th>Teacher Name</th>
<th>Education Level</th>
<th>Position at AP</th>
<th>Years of Experience with ABA</th>
<th>Years of Experience at AP</th>
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<tr>
<td>Jeremy</td>
<td>Masters</td>
<td>Specialized Treatment Analyst</td>
<td>5 Years</td>
<td>5 Years</td>
<td>School Teacher Group Leader</td>
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<tr>
<td>Christine</td>
<td>First Year in Terminal Masters Program</td>
<td>Specialized Treatment Analyst</td>
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<td>5 Years</td>
<td>Group Leader</td>
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<tr>
<td>Donna</td>
<td>Masters</td>
<td>Intern</td>
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<td>Norma</td>
<td>Bachelors</td>
<td>Treatment Analyst</td>
<td>3 Years</td>
<td>3 Years</td>
<td>Group Support</td>
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### DEPENDENT VARIABLES

- Improvement of Standard Scores on Formal Standardized Assessments
- Conducted By:
  - Social Skills Group Teachers
  - Research
  - Blind Evaluator
  - Observational Periods
  - Generalization Observations
OBSERVATIONAL PERIODS: OVERVIEW

• Who Participated
  • Group A
  • Group B

• Occurred
  • T1 (Baseline both)
  • T2 (Immediately Following/Baseline)
  • T3 (16 Week Maintenance/Immediately Following)
  • T4 (32 Week Maintenance/16 Week Maintenance)

OBSERVATIONAL PERIODS: OVERVIEW

• Two Meetings Per Group
• Each Meeting Lasted 2 Hours
• Resembled a Play Group
• Blind Evaluator Present
• Implemented to Assess Strengths and Weakness of Each Participant
• Utilized to Help Scoring on Formal Assessments
OBSERVATIONAL PERIODS: SCHEDULE

- Unstructured Free Play
- Opening Circle
- Structured Games
- Large Group Instruction
- Outdoors
  - Structured Games
  - Unstructured Free Play
- Large Group Instruction
- Unstructured Free Play
- Dismissal

GENERALIZATION PERIODS

- Settings
  - School
  - Home
  - Community
- Conducted Independently By
  - Researcher
  - Social Skill Teacher
  - Blind Evaluator
FORMAL ASSESSMENTS

- Social Skills Improvement Systems (SSIS)
- Social Responsiveness Scale (SRS)
- Walker McConnell (WM)

GENERAL SET UP

- RECRUITMENT
- INTERVIEW

GROUP A  GROUP B

OBSERVATIONAL PERIOD 1
**PRE-MUSICAL CHAIR VIDEO**

**TABLE OF DIFFERENCE**

<table>
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<tr>
<th>Evaluator</th>
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<th>SRS</th>
<th>WM</th>
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<td>Group A &amp; Group B T1</td>
<td>Group A &amp; Group B T1</td>
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<td>No Significant Difference</td>
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<tr>
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GENERAL SET UP

- RECRUITMENT
- INTERVIEW

GROUP A

GROUP B

OBSERVATIONAL PERIOD 1

GROUP A INTERVENTION

TEACHING PROCEDURES

- Only ABA Based Strategies
- Structured but Flexible Approach
- Continuous Teaching
- Main Teaching Procedures
  - Group Discrete Trial Teaching
  - 1 to 1 Discrete Trial Teaching (When Needed)
  - Cool vs Not Cool Procedure
  - Embedded Instructions
  - Shaping
  - Incidental Teaching
  - Teaching Interaction Procedure
CLINICAL SKILLS TAUGHT

- Behavioral Control
- Frustration Tolerance
- Recall
- Contingencies
- Attending
- Observational Learning
- Conditional Instructions
- Receptive Instructions
- “Figuring it Out”
- Play Areas
- Duck-Duck Goose
- Positive Affect
- Learning from Feedback
- Flexibility
- Delayed Instructions
- Rule Governed Play
- General Knowledge
- Pop Culture Knowledge
- Playing with A Friend
- Asking for Help
- Joining In
- Walking in Line
- Talking to a Friend
- Responding
- Being Silly
- Losing Graciously
- Trying
- Friendship Development

REINFORCEMENT SYSTEMS
GENERAL SCHEDULE

• Arrival & Small Group Instruction
• Large Group Instruction
• Fun Games with Penguins
  • Probes
  • Teaching
• More Group Instruction
• Teaching Play
• Transition & Outdoors
• Cash In

GENERAL SET UP

RECRUITMENT

INTERVIEW

GROUP A

GROUP B

OBSERVATIONAL PERIOD 1

GROUP A INTERVENTION

OBSERVATIONAL PERIOD 2
GENERAL SET UP

RECRUITMENT

INTERVIEW

GROUP A

GROUP B

OBSERVATIONAL PERIOD 1

GROUP A INTERVENTION

OBSERVATIONAL PERIOD 2

GROUP B INTERVENTION

OBSERVATIONAL PERIOD 3

OBSERVATIONAL PERIOD 4
RESULTS

SINGLE SUBJECT STUDIES
GROUP DESIGN STUDIES

SSIS

Graph showing Social Skills over time for Teacher, Researcher, and Blind Evaluator.
Table 3. Statistical Differences Between Group A and Group B Using a One-Way ANOVA

<table>
<thead>
<tr>
<th></th>
<th>T1 Significant Difference</th>
<th>T2 Significant Difference</th>
<th>T3 Significant Difference</th>
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<td>NS</td>
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<td>NS</td>
<td>NS</td>
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<tr>
<td>SSIS - Social Skills Group Teacher</td>
<td>0.192</td>
<td>&lt;0.001</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>SSIS - Researcher</td>
<td>NS</td>
<td>&lt;0.001</td>
<td>NS</td>
<td>NS</td>
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<tr>
<td>SRS - Blind Evaluator</td>
<td>NS</td>
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<tr>
<td>SRS - Social Skills Group Teacher</td>
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Table 3. Statistical Differences Between Group A and Group B Using a One-Way Anova

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</table>
Table 3. Statistical Differences Between Group A and Group B Using a One-Way Anova

<table>
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SOCIAL VALIDITY

• “We have loved being part of this study. Very impressed with the quality of teachers and instructions.”

• “He has most definitely made huge leaps and gains in his social awareness and standing amongst his peers especially the typical ones.”

• “He has made significant strides but he still has a little ways to go and again many of those strides were because of you guys and for that we thank you!!!”

• “We have we have seen a BIG difference thanks to you and the THERAPIST.”

SOCIAL VALIDITY

<table>
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<tr>
<th>Question</th>
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<td>Satisfaction Learning Social Skills</td>
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<td>Satisfaction Learning Play Skills</td>
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<td>Satisfaction with the Communication</td>
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<td>Overall Satisfaction</td>
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OVERVIEW OF RESULTS

• Clinical Results
• Single Subject Results
• Group Design Results
• Social Validity Results
• Overall Results

POST MUSICAL CHAIRS
LESSONS LEARNED

WHAT TO LOOK FOR
CLIENT CHARACTERISTICS

• Decide on Your Group
  • Age
  • Functioning Level
  • Group Goals
• Family Support
• Other Agencies
• Would Like Children to Be Similar

CLIENT TARGETED BEHAVIORS

• Receptive Language
• Expressive Language
• Social Awareness
• Social Desire
• Attending
• Contingencies
• Aberrant Behavior
TEACHERS AND TRAINING

COMPONENTS OF QUALITY STAFF

- Fun
- Receptive
- Systematic
- Adaptable/Flexible
- Objective
- Analytic
- Engaging
- Professional
- Creative
- Reinforcing
- Widely Competent
- Big Picture vs Little Picture
- Child Driven
- Conceptual History
STAFF TRAINING

- What Makes Someone Qualified?
  - Certification does not equal qualified
- How Many Hours Does it Take to Be Qualified?
  - 40 Hours, 1500 Hours, 3000 Hours
  - Competency based, not time based
- How Do You Get Someone Qualified?
  - Didactic instruction
  - Hands on training
  - Years of experience
“It is what you learn after you know it all that counts”

John Wooden

TEACHING METHODS
VARIOUS TEACHING METHODS

- Group Discrete Trial Teaching
- Cool vs Not Cool
- Teaching Interaction Procedure
- Embedded Instruction
- Incidental Teaching

REGARDLESS OF THE TEACHING

- A Progressive Model
  - Not Adhering to Set Protocols
- Structured yet Flexible Approach
  - Game Plan
  - Call an Audible
- In-The-Moment Analysis
  - Constant Observations
  - Across Multiple Domains
Applied Behavior Analysis is a Science and, Therefore, Progressive

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Abstract  Applied behavior analysis (ABA) is a science and, therefore, involves progressive approaches and outcomes. In this commentary we argue that the spirit and method of science should be maintained in order to avoid reductionist procedures, stifled innovation, and one-size-fits-all, universalistic and nonprogressive protocols that become increasingly removed from meaningful progress for individuals diagnosed with autism. In this commentary, we offer a description of progressive behavioral education (PBE) as a systematic, step-by-step, and sequential approach to applied behavior analysis (ABA). In a progressive approach to ABA, the therapist employs a structured yet flexible process, which is contingent upon and responsive to child progress. We will describe PBE in ABA, contrast it to reductionist ABA, and provide rationales for both the substance and intent of ABA as a progressive scientific method for improving conditions of social relevance for individuals with ASD.

Keywords  Applied behavior analysis  Behavioral Intervention  Discrete trial teaching  Functional analysis

The first group are the first four authors who appear in alphabetical order for their last name. The second group are the fifth through eighth author and they also appear in alphabetical order by their last name.

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GROUP DTT

• Three Term Contingency
• Flexible Prompt Fading
• Type of Discrete Trials
  • Sequential
  • Random Sequential
  • Choral
• Lead Teacher Responsibilities
• Shadow Teacher Responsibilities
DORIS VIDEO

COOL VS NOT COOL

• A Social Discrimination Program
• Discriminate Between
  • Appropriate Behavior (Cool)
  • Inappropriate Behavior (Not Cool)
COOL VERSUS NOT COOL VIDEO

COOL VS NOT COOL

- A Social Discrimination Program
- Discriminate Between
  - Appropriate Behavior (Cool)
  - Inappropriate Behavior (Not Cool)
- Used to Teach:
  - General Social Skills
  - Social Language
  - Reduction of Stereotypic Behavior
  - Reduction of SIB or Aggression
  - School Behavior
COOL VS NOT COOL

- Pre-Requisites
  - Attending
  - Matching Skills
  - Abstract Concepts
  - Receptive Language
- How to Implement
  - Receptive Program
  - Teacher Modeling
  - Child Role-Playing
  - Teaching Interaction Procedure

THE TEACHING INTERACTION PROCEDURE

“Teaching Interactions”
“TP’s”
WHAT IS A TEACHING INTERACTION?

• A Multi-Component Teaching Strategy
• Six Essential Steps:
  • Label and Identify
  • Rationale
  • Description and Demonstration
  • Practice
  • Feedback
  • Optional External Consequence

TEACHING INTERACTION VIDEO WITH RICK
WHAT IS A TEACHING INTERACTION?

- An Interactive Teaching Procedure Between the Student and the Teacher
  - Structured, yet Flexible
  - Active Participation
- Great Variation

LABELING AND IDENTIFICATION

- Inform the Student Of What Skill You Will Be Working On
- Clearly Define the Behavior
- When and Where the Student Should use the Skill
- When and Where the Student Should Not use the Skill
MEANINGFUL RATIONALE

• Explains to the Student Why He or She Should Display the Behavior
• Usually Takes Form of an “If_____Then___ Statement”
• Good Rationales Are:
  • Meaningful
  • Motivating
  • Fading of Reinforcement
  • Provide Self-Instruction

BEHAVIORAL STEPS

• Break Down into Smaller Skill Steps
• How Many Skill Steps?
• Each Skill Step can be on Opportunity for Discrimination Training.
  • Cool Versus Not Cool Program
TEACHER DEMONSTRATION

• Teacher Displays the Behavior
• Correct Demonstration
• Incorrect Demonstration
• Should Resemble Real Life Situations
• Learner to Rate Demonstration
  • Overall
  • Specific Skill Steps
• Should Program for Generalization with Multiple Exemplars

ROLE-PLAY

• Set Up Simulated Situations for the Student to Display the Behavior
• Initially, These Situations Should be Obvious
  • Student Should be Successful
• Over Time you Want to Expand to More Natural Situations
• This is the Key to Generalization
FEEDBACK

• Immediate Positive Feedback
• Specific to 3 or 4 Things the Student did Correctly
• Followed by Specific Suggestion of What the Student Needs to Remember for the Next Time the Skill is Practiced
• Balance of Specific Feedback and Fun/Motivating Reinforcement
• Re-Practice if Necessary

EXTERNAL CONSEQUENCE (OPTIONAL)

• Ties Into the Student’s Motivational System
• Reinforcement Should be Enthusiastic and Individualized
• Might Involve Either Positive or Corrective Consequences
• Strengthens Motivation
• Enhances Feedback
• Faded Over Time
GENERALIZATION TRAINING

- People
- Places
- Time
- Increasing Provocativeness
- Predictability
- Authenticity
- Reinforcement

TI KISSING VIDEO
TI WITH KATHLEEN VIDEO

EMBEDED INSTRUCTIONS & INCIDENTAL TEACHING

• The Importance of Play
  • Work on Multiple Skills Simultaneously
  • Develop Peer Reinforcement
  • Leave them With a Tool
FRUIT SALAD

EMBEDED INSTRUCTIONS & INCIDENTAL TEACHING

• The Importance of Play
  • Work on Multiple Skills Simultaneously
  • Develop Peer Reinforcement
  • Leave them With a Tool

• Incidental Teaching
  • Balance of Child Directed and Teacher Initiated
  • Follow their Lead
  • Flexibility
REINFORCEMENT

RANGE OF ABA

- Tangible
- Individual Token Economy
- Group Token Economy
- Self Monitoring
REINFORCEMENT SYSTEMS

- Catching Them Being Good
- Individual Token Economies
  - Special Reinforcement Area
  - Moving Up the Chart
  - Faded Out
- Behavioral Thermometer: “Cool Chart”
  - Treasure Chest
  - Time-Out Ribbon

LEVEL VIDEO
CURRICULUM

SELECTING CURRICULUM

• No Universal Curriculum
SO MANY SKILLS THAT CAN BE TAUGHT

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Key: Black bars represent skills targeted in 3 to 4 sessions; gray bars represent skills targeted in 1 to 2 sessions; white bars represent skills not targeted

SELECTING CURRICULUM

- No Universal Curriculum
- Current State of Curriculum
- How Curriculum Should Be Selected
- Domains
  - Pre-Requisite Behaviors
  - Social Play
  - Social Language
  - Social Interaction
  - Social Relatedness
PRE-REQUISITE

- Also Known As Learning to Learn Skills
- Help Get the Student Ready for Learning
- Variety of Skills
  - Attending
  - Sitting
  - Responding First Time
  - Recall
  - Contingency Development
  - Reduction of Aberrant Behavior

CONTINGENCY DEVELOPMENT VIDEO
PEER REINFORCEMENT DEVELOPMENT VIDEO

INITIAL JOINT ATTENTION VIDEO
MORE ADVANCED JOINT ATTENTION VIDEO

WALKING VIDEO
CONDITIONAL INSTRUCTIONS VIDEO

SOCIAL PLAY

• Indoor and Outdoor Free-Play
• Indoor and Outdoor Structured Play
• Social Behaviors Associated with Play
SLEEPING GAME VIDEO

PRETEND PLAY VIDEO
DATA COLLECTION, EVALUATION, AND MEASUREMENT

MULTIPLE MEASURES

- Formal Assessments
  - SSiS
  - SRS
  - ABC
  - Walker
- Observational Data
  - We Avoid Trial by Trial
  - Probe Data
  - Naturalistic Probes with Task Analysis
  - Estimation Data
A comparison of data collection techniques used with discrete trial teaching
Mitchell T. Taubman, Ronald B. Leaf, John J. McEachin, Sasha Papovich, Justin B. Leaf
Autism Partnership, United States

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ABSTRACT
This study was designed to examine the comparative value of three discrete trial teaching data collection techniques: Continuous recording, time-out, and estimation. The data collection techniques were administered by behavior therapists while teaching children diagnosed with autism or developmental disabilities to perform a variety of tasks. Two of the data collection techniques were further evaluated with respect to their reliability. The data collection techniques were compared with respect to their ability to increase the rate of responding, the rate of extinction of the target behavior, and the rate of acquisition of the target behavior.

MULTIPLE MEASURES
- Formal Assessments
- SSiS
- SRS
- ABC
- Walker
- Observational Data
- We Avoid Trial by Trial
- Probe Data
- Naturalistic Probes with Task Analysis
- Estimation Data
- Social Validity
PARENTS AND PEERS

• Parents
  • Keep Them Involved
  • Debrief Every Session
  • Open-Door Policy
  • Bi-Monthly Meetings
  • Get Their Ideas

• Peers
  • Generally Do Not Use Siblings
  • Treat As Any Other Member
THANK YOU

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