



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>
- Scroll Down for Dr. Justin Leaf Presentations
- Title of Talk: NAC
- Password: NAC (All CAPS)
- Email: Jblautpar@aol.com



MY HISTORY









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

- **Orsmond, Krauss, & Seltzer (2004)**
 - 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

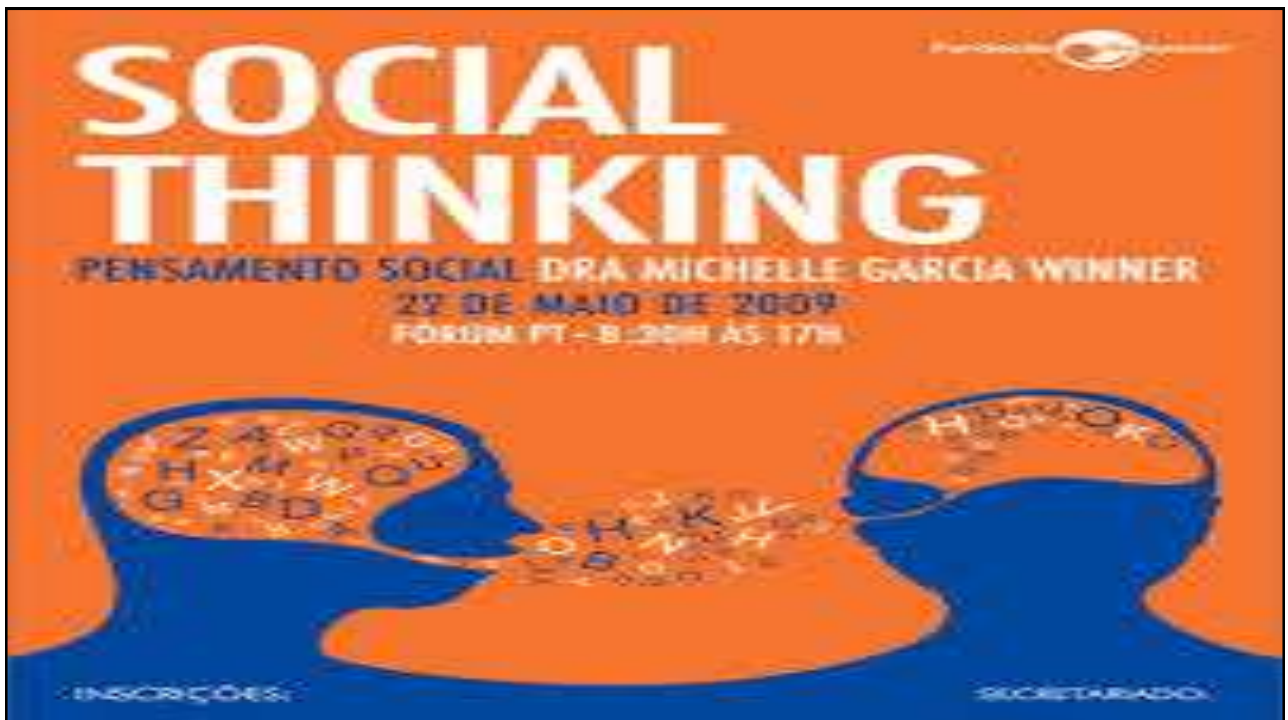


FRIENDSHIP ALGORITHM



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*”
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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

Behavioral Interventions
Behav. Intervent. (2012)
 Published online in Wiley Online Library
 (wileyonlinelibrary.com) DOI: 10.1002/bin.1357

A COMPARISON OF DISCRETE TRIAL TEACHING IMPLEMENTED IN A ONE-TO-ONE INSTRUCTIONAL FORMAT AND IN A GROUP INSTRUCTIONAL FORMAT

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 Aiyne Kassarjian¹, Mitchell Tsubman¹, John McGachin¹, Ronald Leaf¹ and
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Discrete trial teaching (DTT) is a systematic form of intervention commonly implemented with children and adolescents diagnosed with autism spectrum disorder. Experimenters and clinicians have implemented DTT in both one-to-one instructional formats and group instructional formats to teach a wide variety of skills to children and adolescents diagnosed with autism spectrum disorder. The purpose of this study was to compare DTT implemented in a one-to-one instructional format with DTT implemented in a group instructional format in order to determine which format was more effective, efficient, resulted in higher observational learning, and resulted in better maintenance when teaching a variety of expressive skills. The experimenters utilized a parallel treatment design, and the results indicated that both instructional formats were equally effective, there were mixed results in terms of maintenance and efficiency, and group instruction resulted in observational learning. Copyright © 2012 John Wiley & Sons, Ltd.

Discrete trial teaching (DTT) is a systematic form of instruction commonly implemented with children and adolescents diagnosed with autism spectrum disorder (ASD). DTT consists of three main components: (i) an instruction from the teacher; (ii) a response by the learner; and (iii) a consequence (e.g., positive reinforcement or corrective feedback) provided by the teacher following the learner's response. Experimenters have implemented DTT to teach expressive labeling (e.g., Akmanoglu-Ustadag & Batu, 2005), receptive labeling (e.g., Leaf, Sherman, & Sheldon, 2010), self-help skills (e.g., Sewell, Collins, Hemmeter, & Schuster, 1998), and conversational skills (e.g., Charlop & Walsh, 1986; Matson, Sevin, Fridley, & Love, 1990) to children with autism. DTT has been utilized to teach skills to children who are more impaired (e.g., lower cognitive capabilities, language capabilities, and social behaviors) (e.g., Lovass, 1987) as well as to

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LEVELS OF EVIDENCE

- Years of Clinical Experience



HISTORY OF SOCIAL GROUP VIDEO



POLLYWOG VIDEO



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

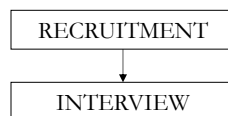
- To Address These Areas of Need
- Using a Randomized Control Trial
- Evaluating a 16 week (32 session) Behaviorally Based Social Skills Group For High Functioning Individuals Diagnosed with ASD



METHODS & RESULTS



GENERAL SET UP





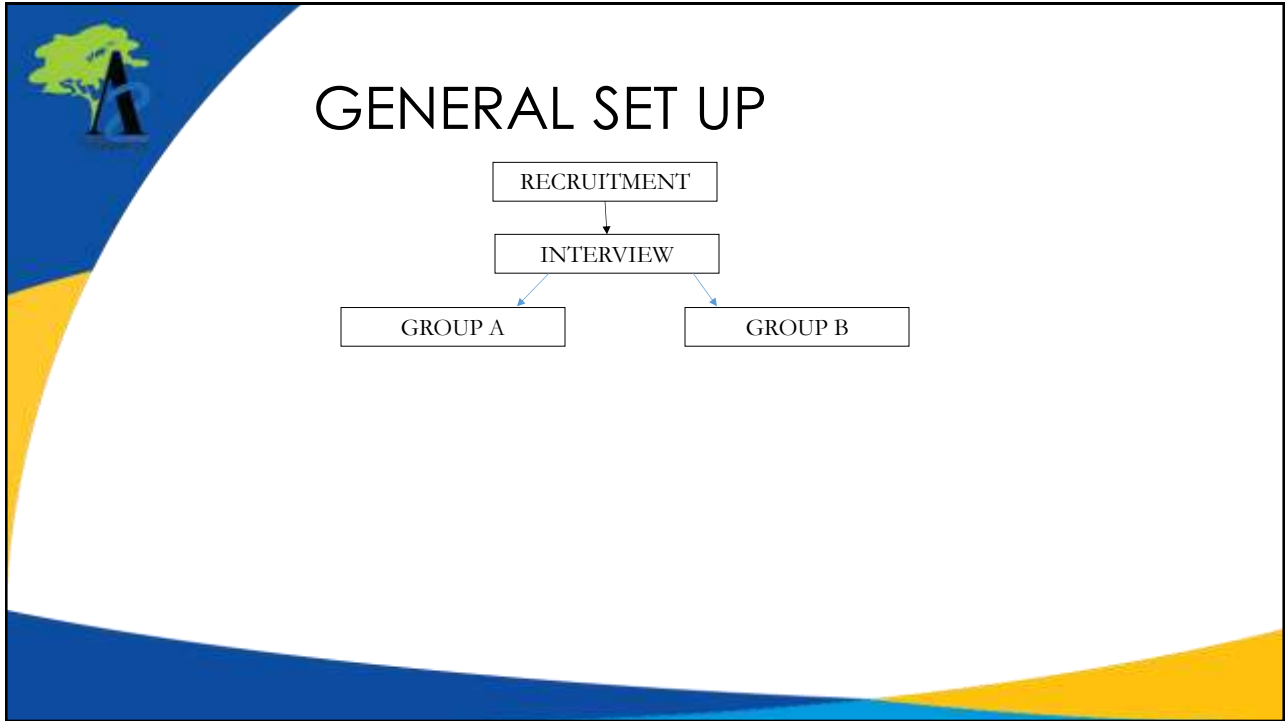
INCLUSION CRITERION

- **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**



Domain	Group A	Group B	P Value	Significant Difference
Number of Participants Meeting Inclusion Criterion	8	7	N/A	N/A
Average Age in Months	55 Months	58 Months	0.555	Not Significant
Average IQ Score	101.4	105.7	0.448	Not Significant
Average Vineland Adaptive Score	83.9	82.9	0.918	Not Significant
Average Expressive 1 Word Standard Score	108.8	109.1	0.933	Not Significant
Average Peabody Picture Vocabulary Standard Score	104.2	108.6	0.435	Not Significant



SOCIAL SKILLS GROUP TEACHERS

Teacher Name	Education Level	Position at AP	Years of Experience with ABA	Years of Experience at AP	Previous History of Groups
Jeremy	Masters	Specialized Treatment Analyst	5 Years	5 Years	School Teacher Group Leader
Christine	First Year in Terminal Masters Program	Specialized Treatment Analyst	5 Years	5 Years	Group Leader
Donna	Masters	Intern	5 Years	10 Months	None
Norma	Bachelors	Treatment Analyst	3 Years	3 Years	Group Support



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

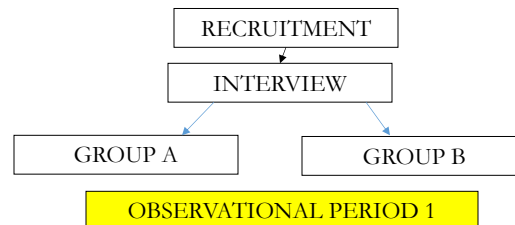


FORMAL ASSESSMENTS

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



GENERAL SET UP

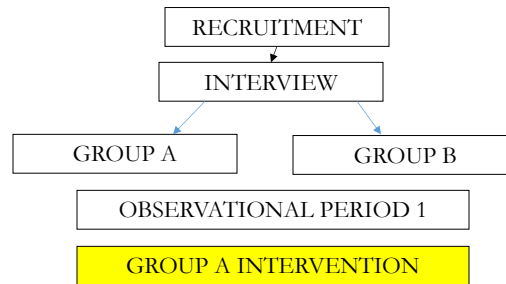




A slide titled "TABLE OF DIFFERENCE" with a blue and yellow decorative background. The title is centered in a large, black, sans-serif font. In the top left corner, there is a small logo featuring a green tree and a black letter 'A'.

Evaluator	SSIS Group A & Group B T1	SRS Group A & Group B T1	WM Group A & Group B T1
Blind Evaluator	No Significant Difference P = 0.836	No Significant Difference P = 0.831	No Significant Difference P = 0.753
Social Skills Teacher	No Significant Difference P = 0.192	No Significant Difference P = 0.572	No Significant Difference P = 0.181
Researcher	No Significant Difference P = 0.298	No Significant Difference P = 0.770	No Significant Difference P = 0.703

GENERAL SET UP



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



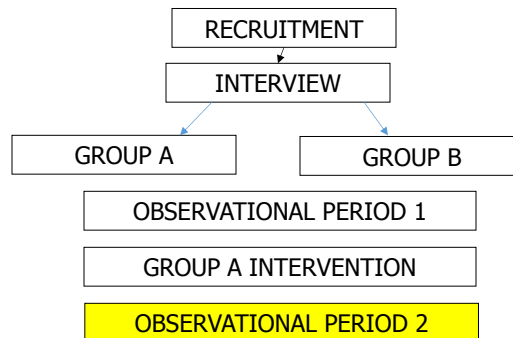


GENERAL SCHEDULE

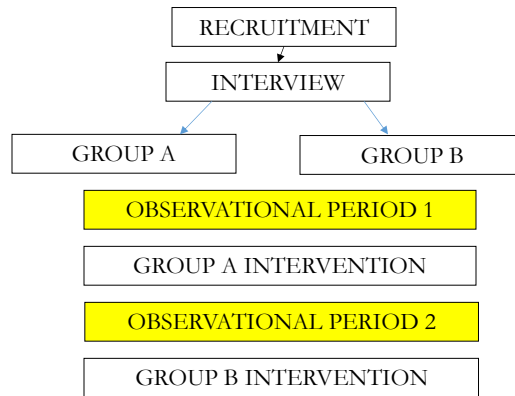
- Arrival & Small Group Instruction
- Large Group Instruction
- Fun Games with Penguins
 - Probes
 - Teaching
- More Group Instruction
- Teaching Play
- Transition & Outdoors
- Cash In



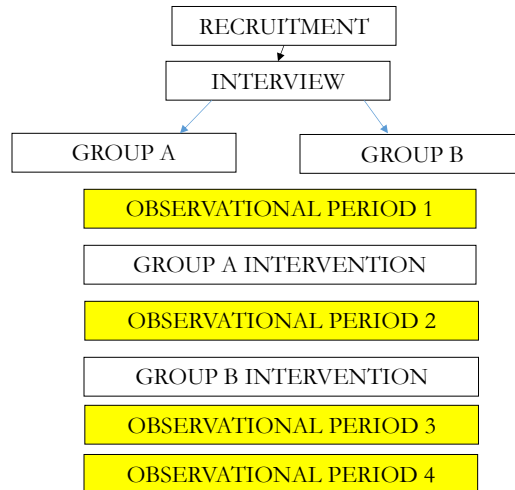
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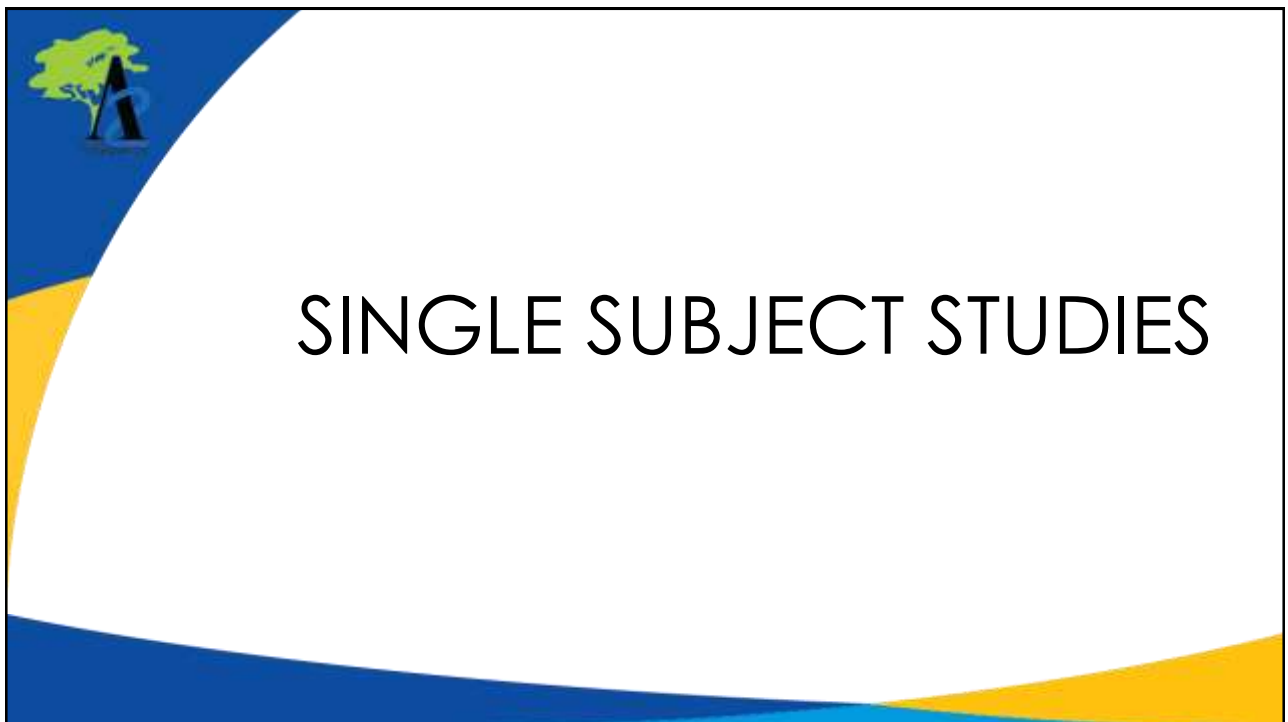
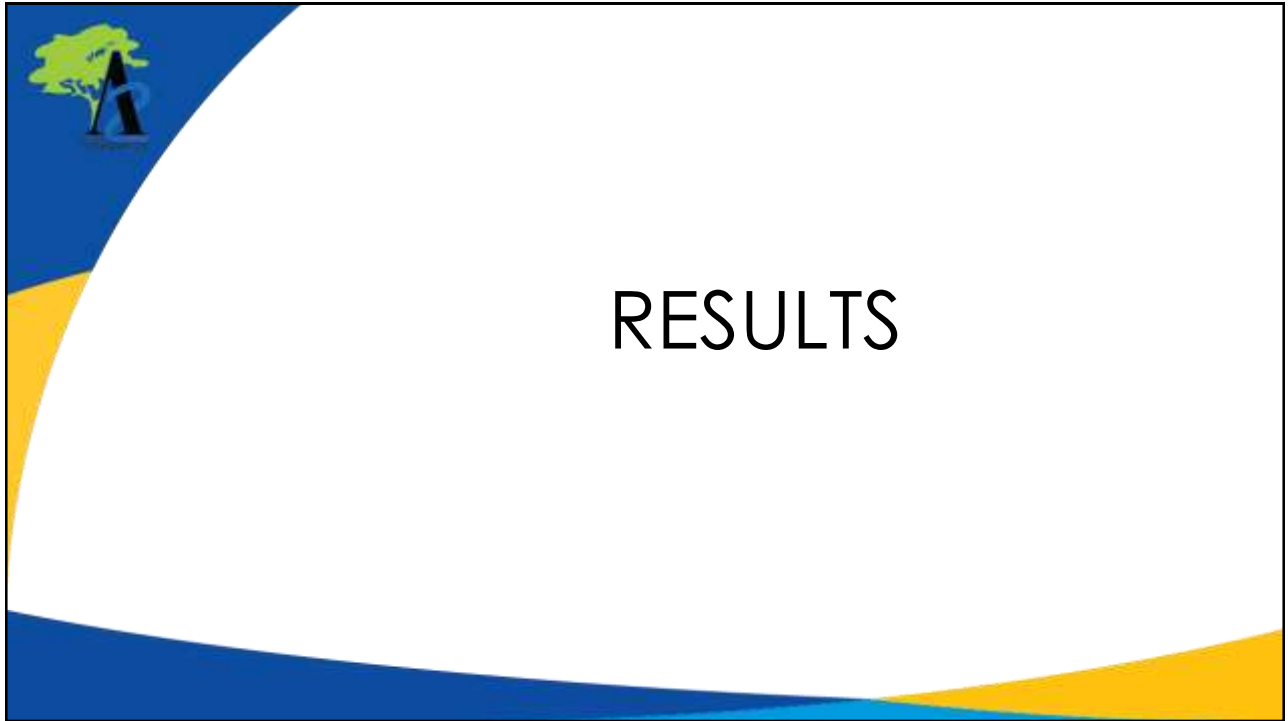


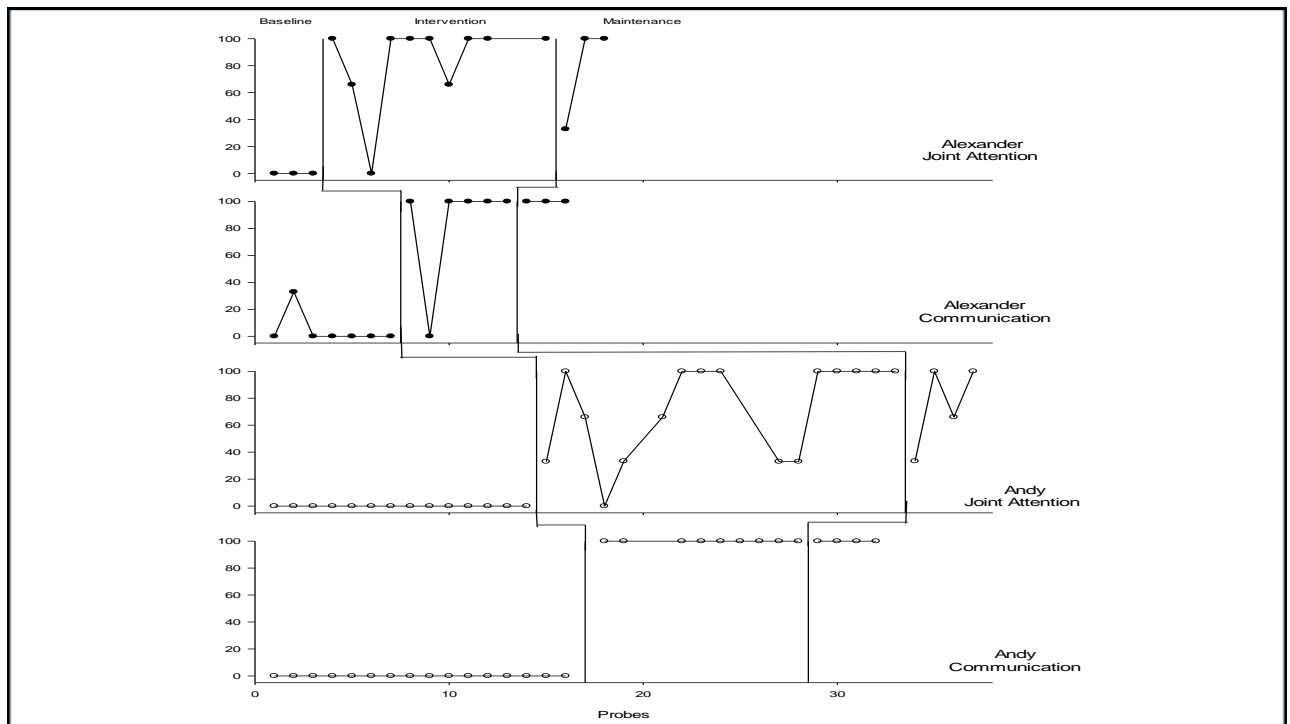
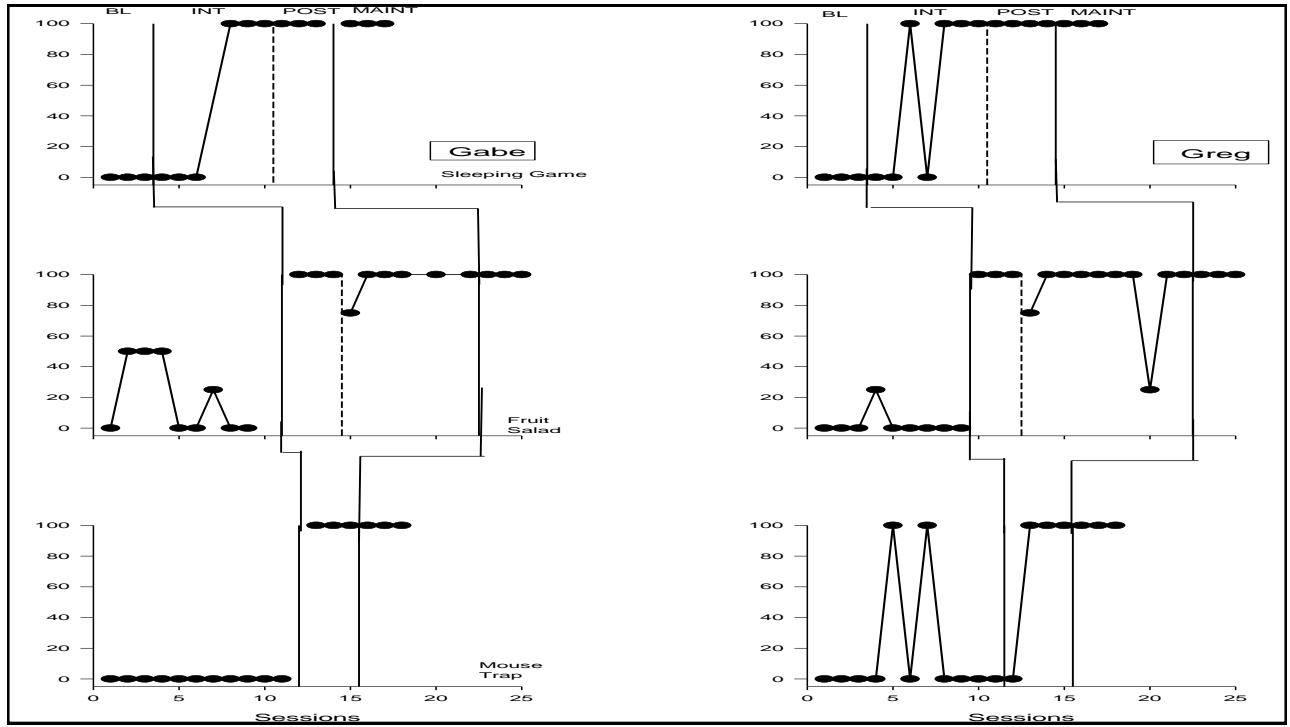
GENERAL SET UP



GENERAL SET UP

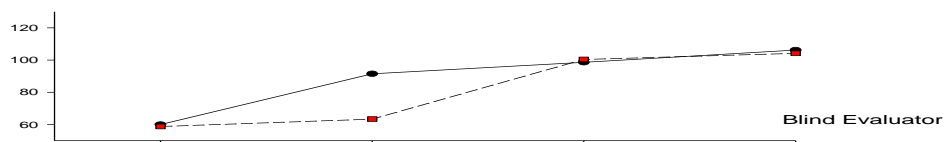






GROUP DESIGN STUDIES

SSIS



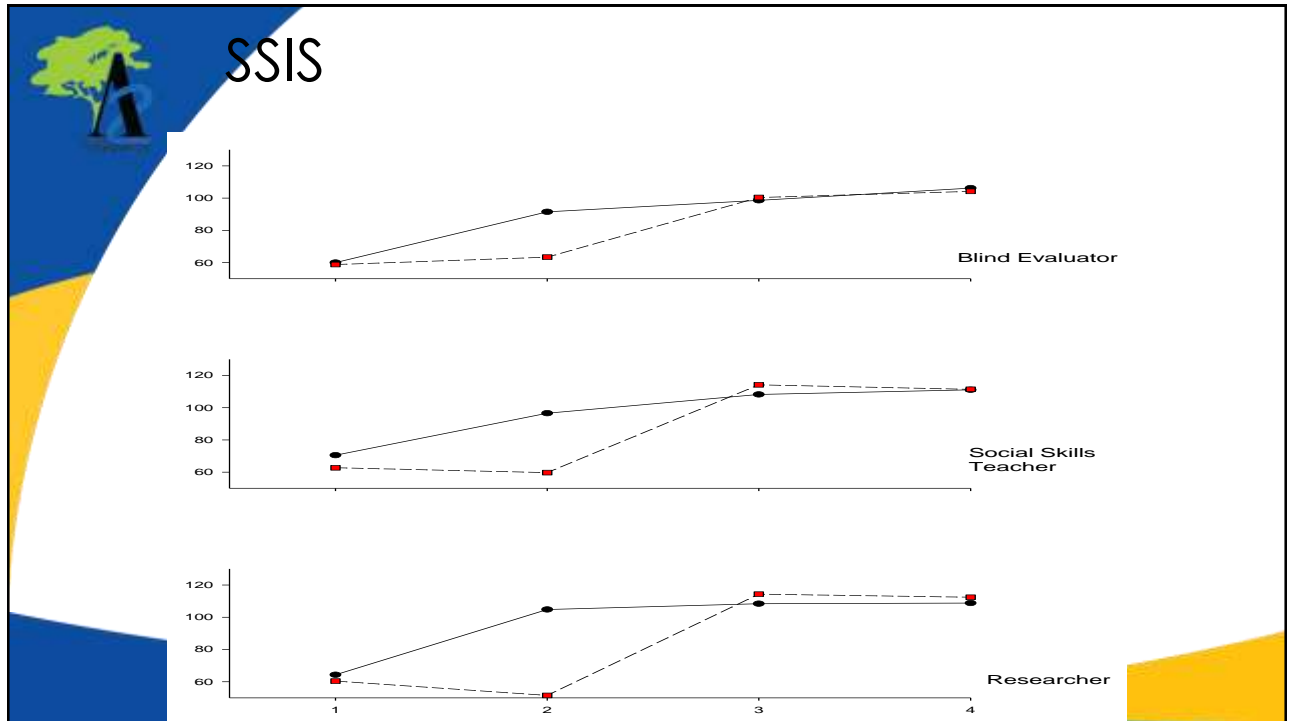


Table 3. Statistical Differences Between Group A and Group B Using a One-Way Anova

	T1 Significant Difference P Level	T2 Significant Difference P Level	T3 Significant Difference P Level	T4 Significant Difference P Level
SSIS -Blind Evaluator	NS 0.836	SIG <0.001	NS 0.724	NS 0.805
SSIS-Social Skills Group Teacher	NS 0.192	SIG <0.001	NS 0.125	NS 0.964
SSIS-Researcher	NS 0.298	SIG <0.001	NS 0.156	NS 0.430
SRS-Blind Evaluator	NS 0.831	SIG <0.001	NS 0.460	NS 0.451
SRS-Social Skills Group Teacher	NS 0.572	SIG <0.001	NS 0.027	NS 0.892
SRS-Researcher	NS 0.770	SIG <0.001	NS 0.776	NS 0.920
Walker-Blind Evaluator	NS 0.753	SIG 0.005	NS 0.768	NS 0.715
Walker-Social Skills Group Teacher	NS 0.181	SIG <0.001	NS 0.139	NS 0.939
Walker-Researcher	NS 0.730	SIG <0.001	NS 0.208	NS 0.608

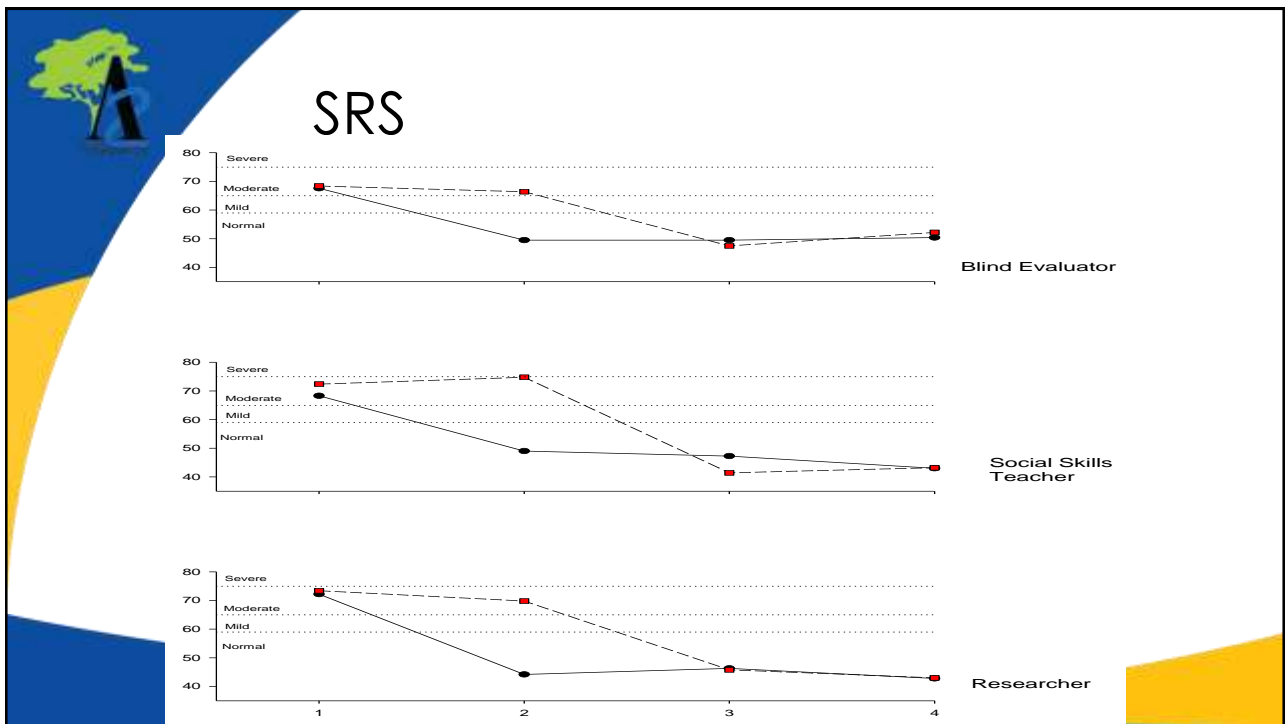
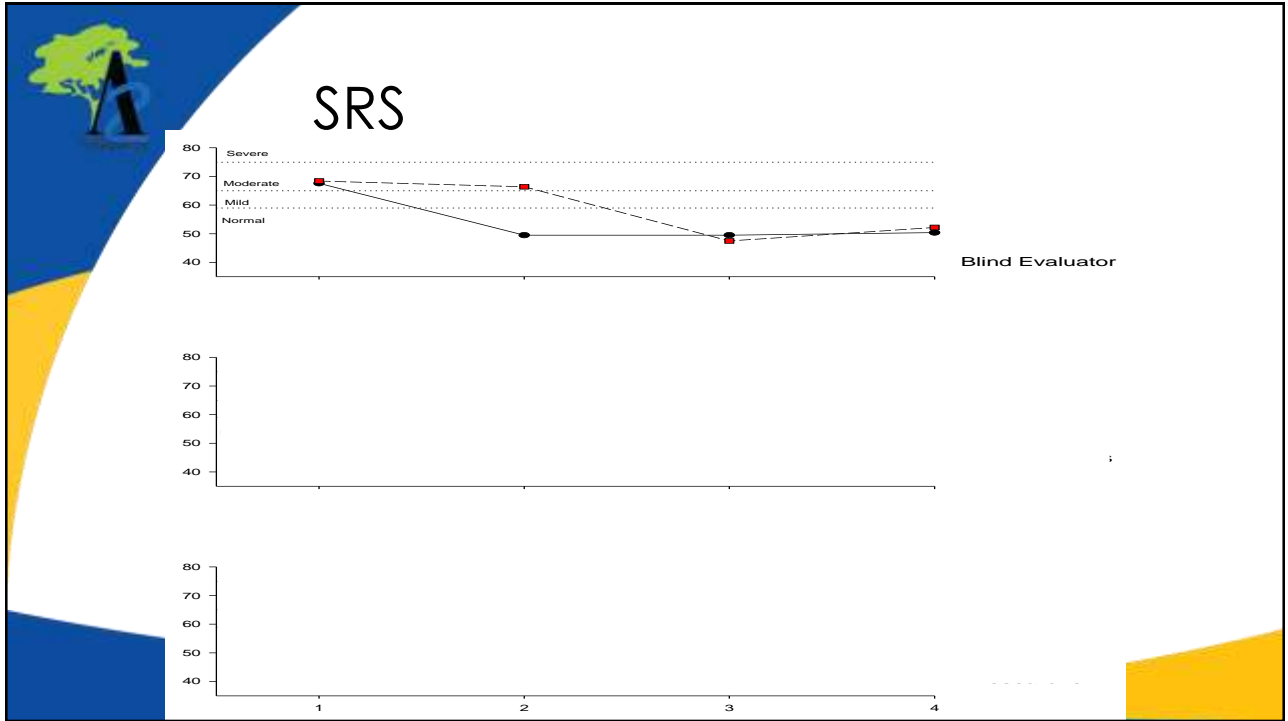
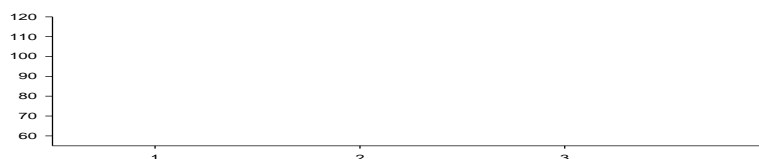
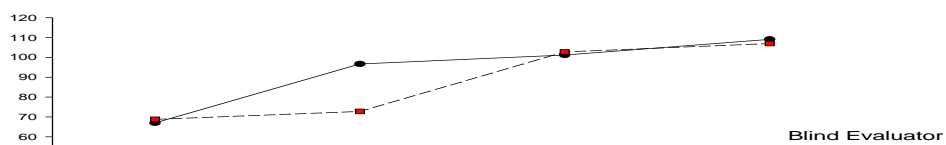


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WM



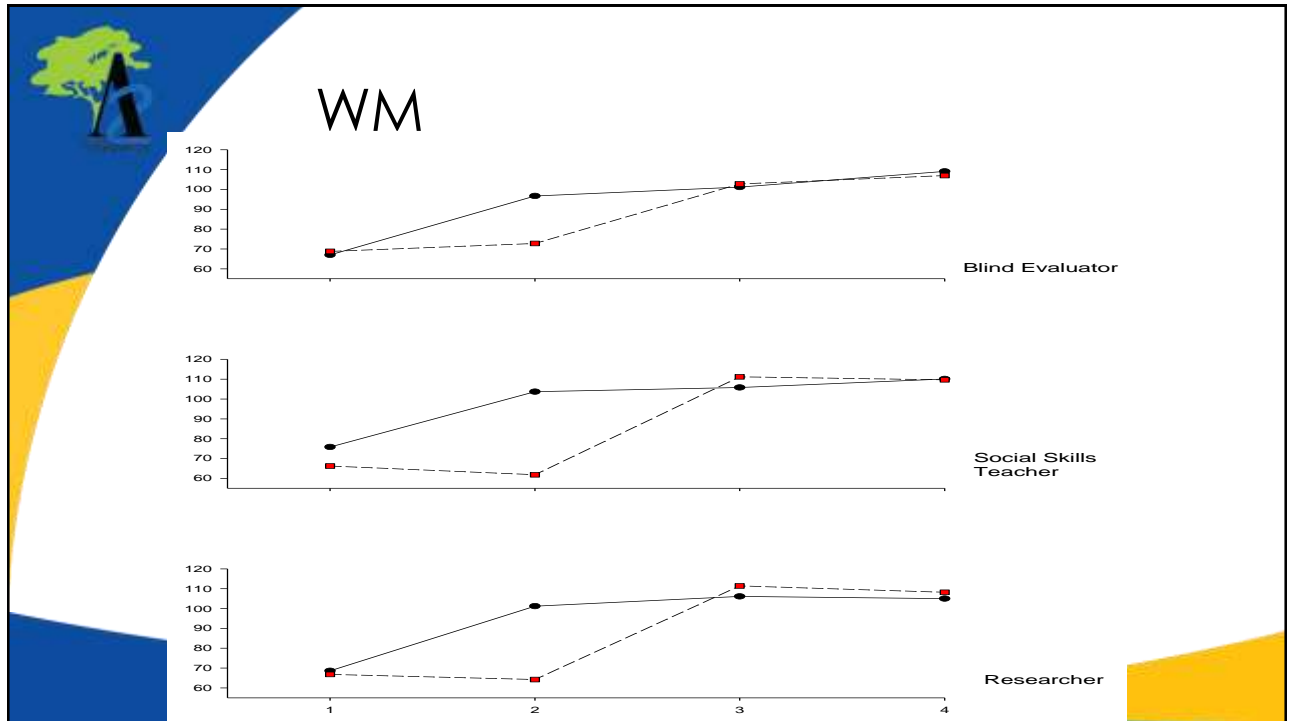


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SOCIAL VALIDITY

- **“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

Question	Group A	Group B	Both Groups
Satisfaction Learning Social Skills	5.8	6.5	6.1
Satisfaction Learning Play Skills	5.8	6.5	6.1
Satisfaction Learning School Readiness Skills	6.2	6.75	6.4
Satisfaction with the Teachers	6.2	7	6.6
Satisfaction with Teachers Ability to Connect With Your Child	6.4	6.75	6.6
Satisfaction with the Communication	6	6.5	6.2
Satisfaction with the Teaching Procedures	6	6.75	6.3
Overall Satisfaction	6.4	7	6.1

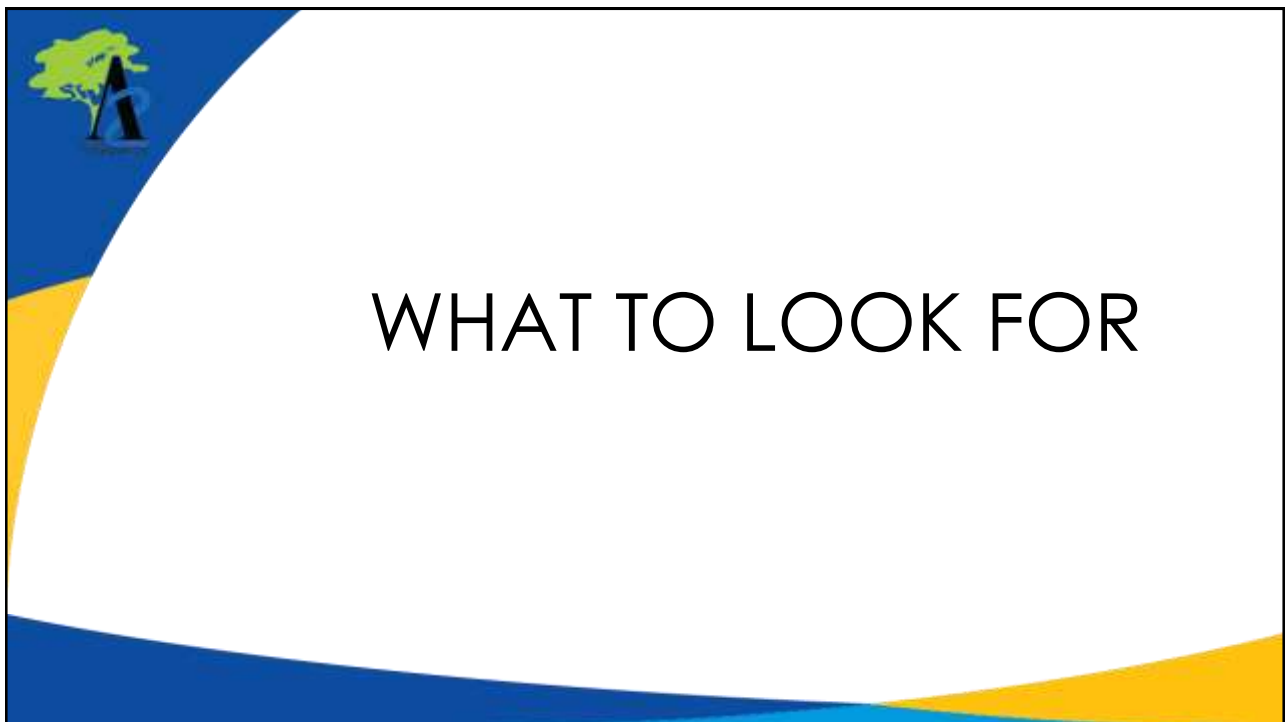


OVERVIEW OF RESULTS

- **Clinical Results**
- **Single Subject Results**
- **Group Design Results**
- **Social Validity Results**
- **Overall Results**



POST MUSICAL CHAIRS





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



CAL TEACHER VIDEO



STAFF TRAINING

- **What Makes Some One 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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Shahla Ala'i-Rosales^d · Robert K. Ross^e · Tristram Smith^f · Mary Jane Weiss^{g,h}

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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 the method of science should be maintained in order to avoid reductionist procedures, stifled innovation, and rote, unresponsive protocols that become increasingly removed from meaningful progress for individuals diagnosed with autism spectrum disorder (ASD). We describe this approach as progressive. 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 progressive 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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The number of children being diagnosed with autism spectrum disorder (ASD) continues to rise (Matson and Kozlowski 2011). For children to make the most meaningful gains both early and intensive behavioral intervention (EBI) is required (Lovaas 1987). The most commonly implemented and empirically supported interventions for individuals diagnosed with ASD are models based on the procedures developed and evaluated within the field of Applied Behavior Analysis (ABA) (Reichow 2012). Researchers have repeatedly shown that when children receive EBI that they make meaningful gains and a certain percentage are able to become indistinguishable from their peers (Lovaas 1987; McEachin et al. 1993). Researchers have also stated that when children receive EBI that it has the potential to save both the state and federal government hundreds of thousands of dollars per individual (Chasson et al. 2007; Jacobson et al. 1998). EBI is both efficient and effective.

EBI is most effective when certain parameters are in place. First, the intervention must be implemented with the correct dosage (intensity), with current consensus being that formal intervention should occur 25–40 h per week (Lovaas 1987; Reichow 2012). Second, it requires that the treatment be comprehensive (Lovaas 1987). Researchers have evaluated components of comprehensive treatments in various studies to increase language development (e.g., Sundberg 2009), social skills development (e.g., Laugeson et al. 2014; Leaf et al. 2012c), self-help skills (e.g., Flynn and Healy 2012), academics (Akmanoglu and Batu 2004), and leisure and play skills (Koenig et al. 2003; Opperheim-Leaf et al. 2012). Third, it requires that staff are adequately trained to implement the procedures with a high degree of fidelity and quality (Robby et al. 2001; Green 1996). Furthermore, long-time experts in the field of EBI have delineated the necessary skill sets and processes believed to

Springer



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)**

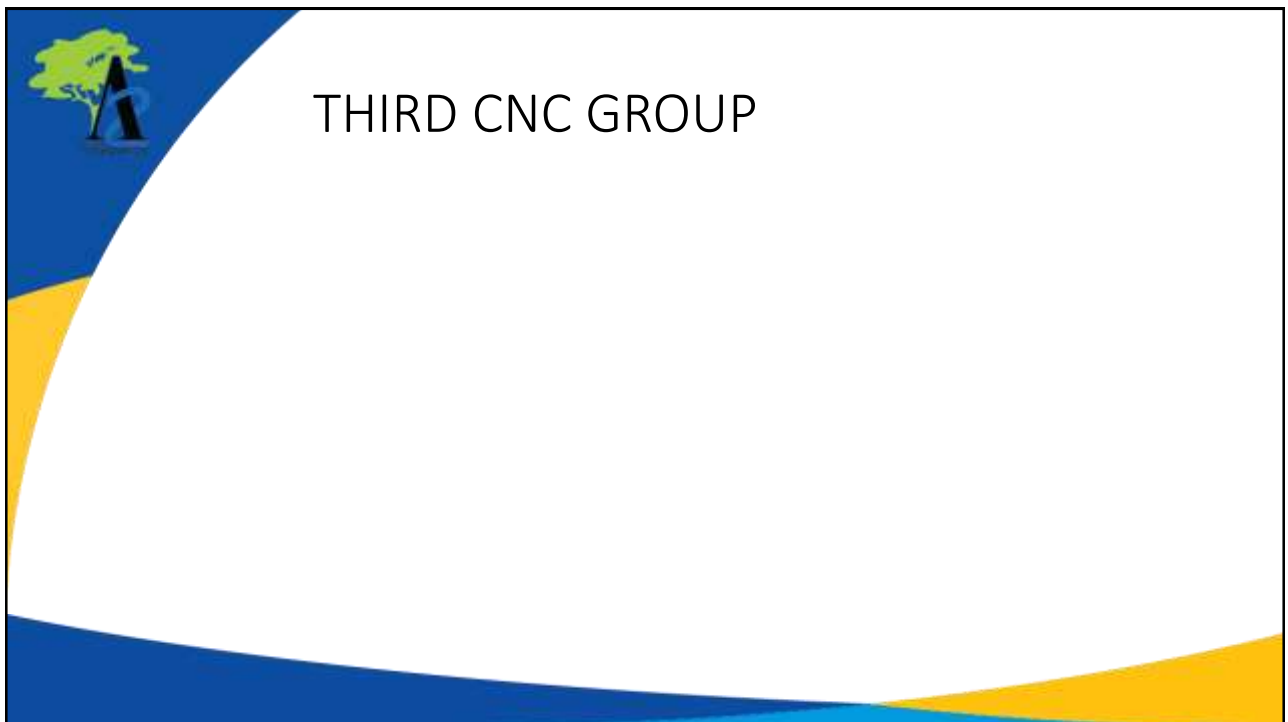
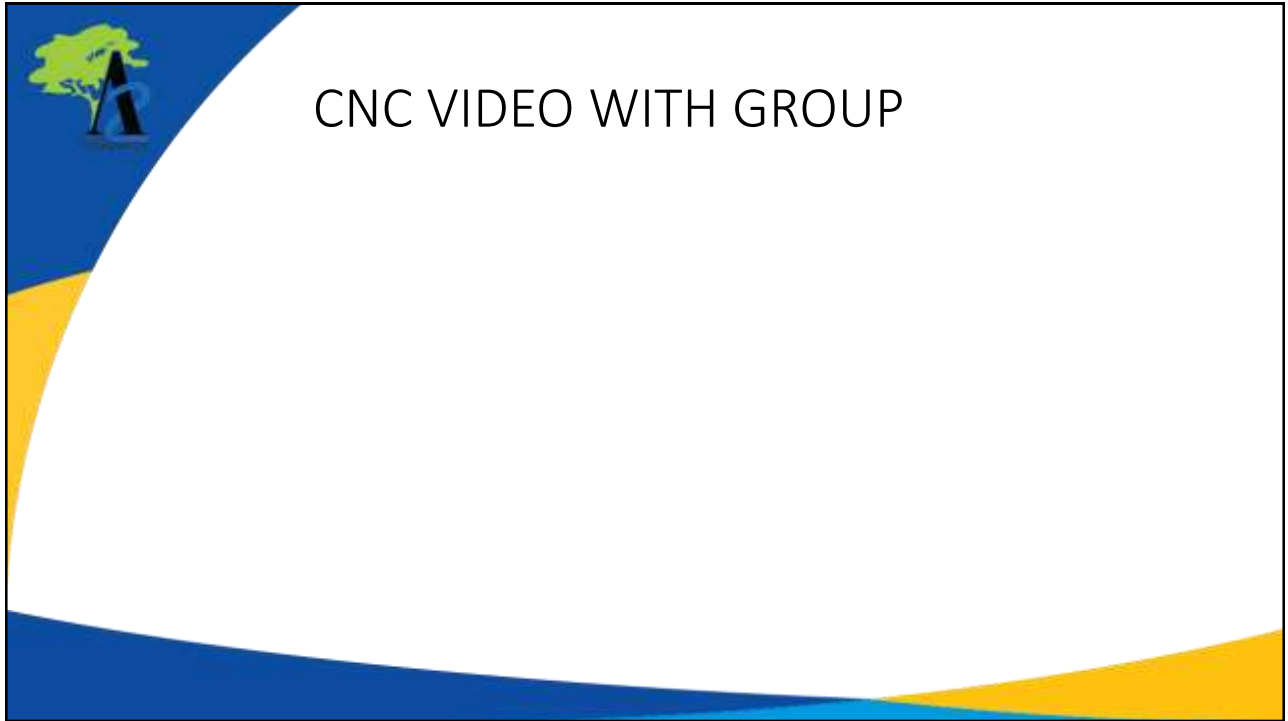


COOL VERSUS NOT COOL VIDEO



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”

“TI’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

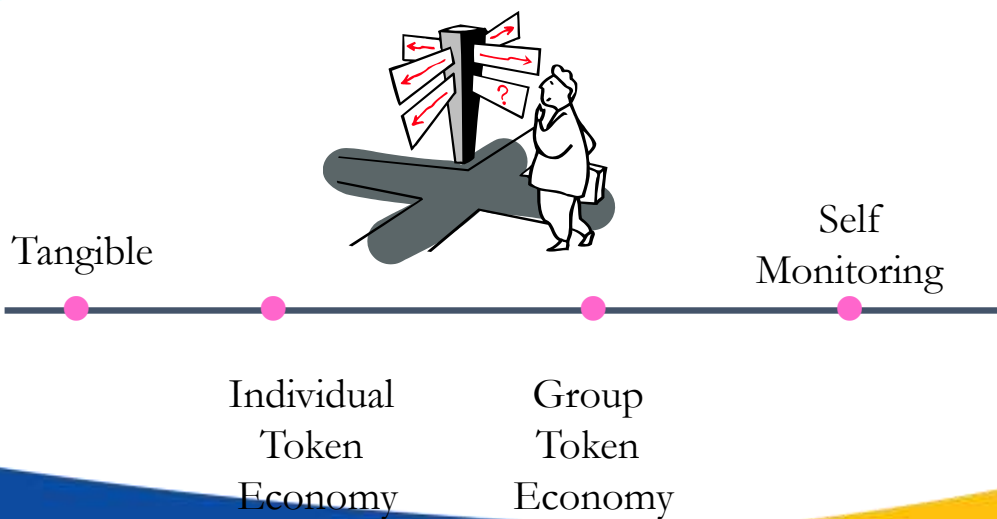


EMBEDED INSTRUCTIONS & INCIDENTAL TEACHING

- **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





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

Skill	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32
Social Discrimination								
Catchup Games								
Reduction of Aberrant Behavior								
Structured Games (e.g., Fruit Salad, Mouse Trap, Sleeping Games)								
Conditioning Peers as Reinforcers								
Positive Affect and Being Silly								
Conventional Learning								
Conditional Instructions								
Inferences and Predictions								
Providing Personal Information and Feedback								
Attending								
General Knowledge and Pop Culture Knowledge								
Playing with a Friend								
Answering and Asking Questions								
Joint Attention								
Figuring It Out, Trying, and Guessing								
Having Fun with Friends								
Sitting and Waiting								
Walking on a Line								
Winning and Losing Gracefully								
Conversation								
Fluency								
Instructions Through Musical Games								
Joining In								
Pretend Play								
Identifying Peers in the Group								
Social Organization								
Compliance								
Prostration Tolerance								
Sharing & Turn Taking								
Contingency Development								
Can Topic Statements								
Flexibility								

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

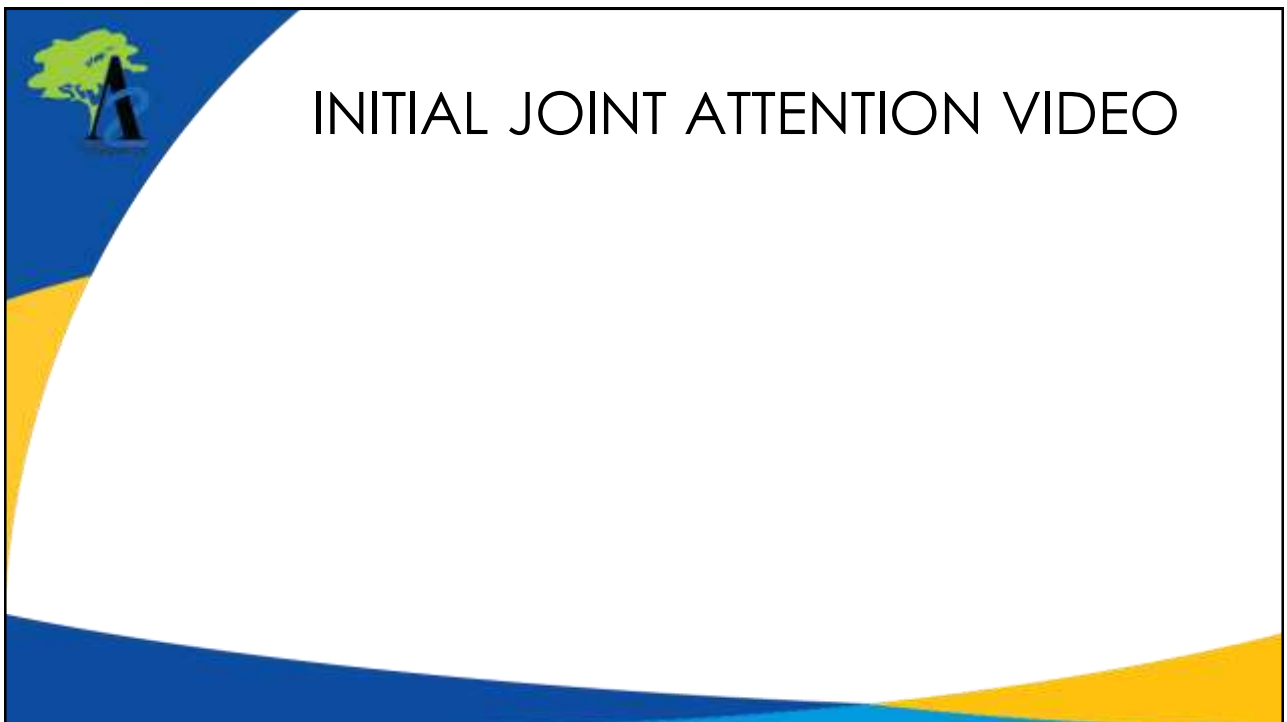
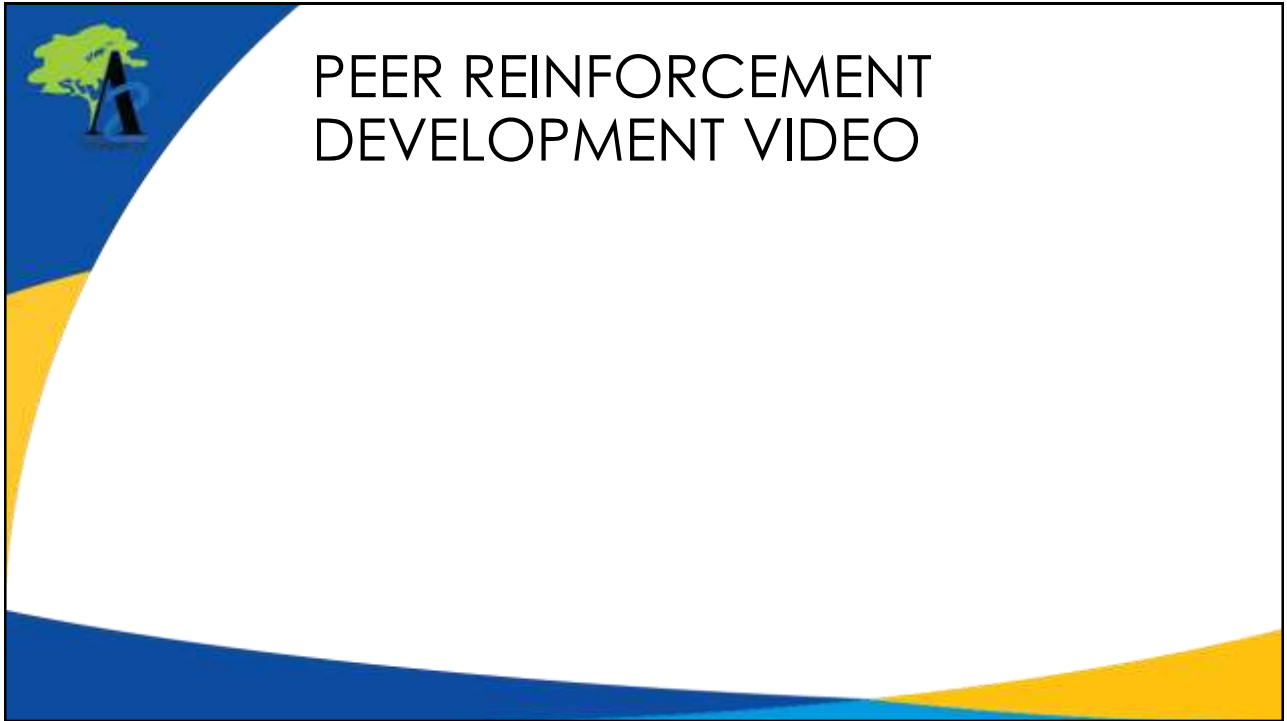


PRE-REQUISITE

- 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





MORE ADVANCED JOINT ATTENTION VIDEO



WALKING VIDEO



CONDITIONAL INSTRUCTIONS VIDEO



SOCIAL PLAY

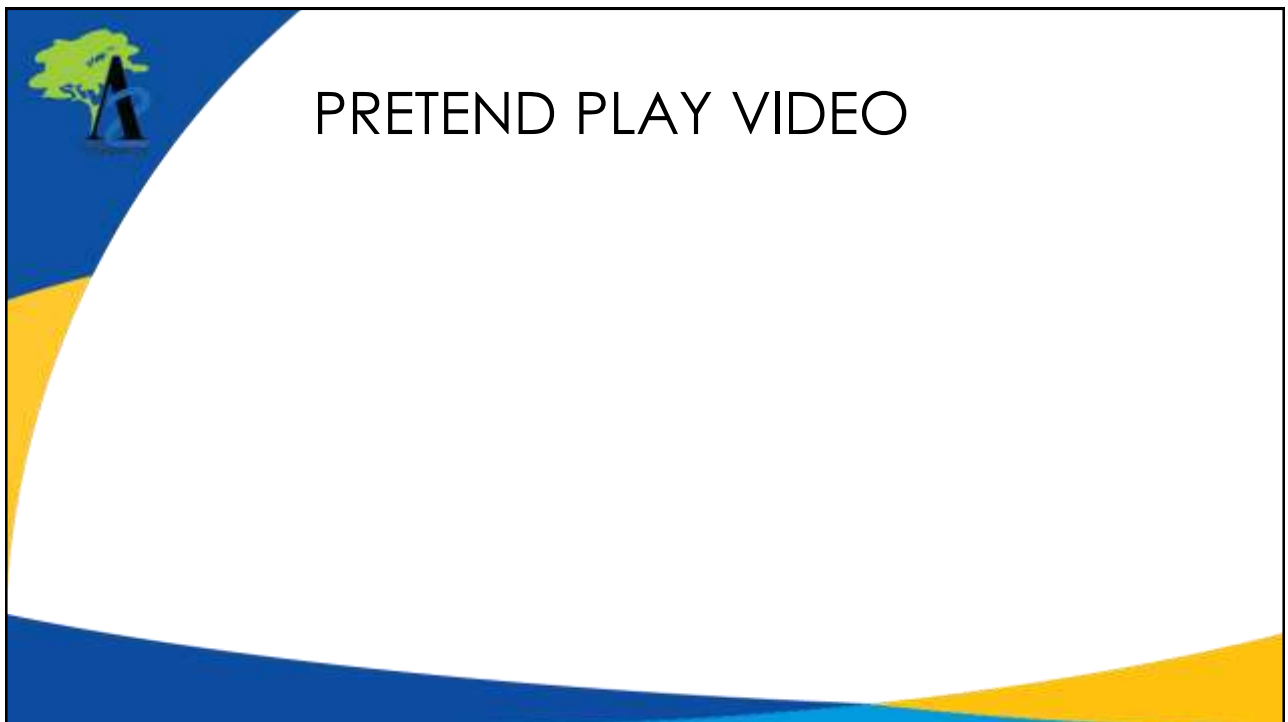
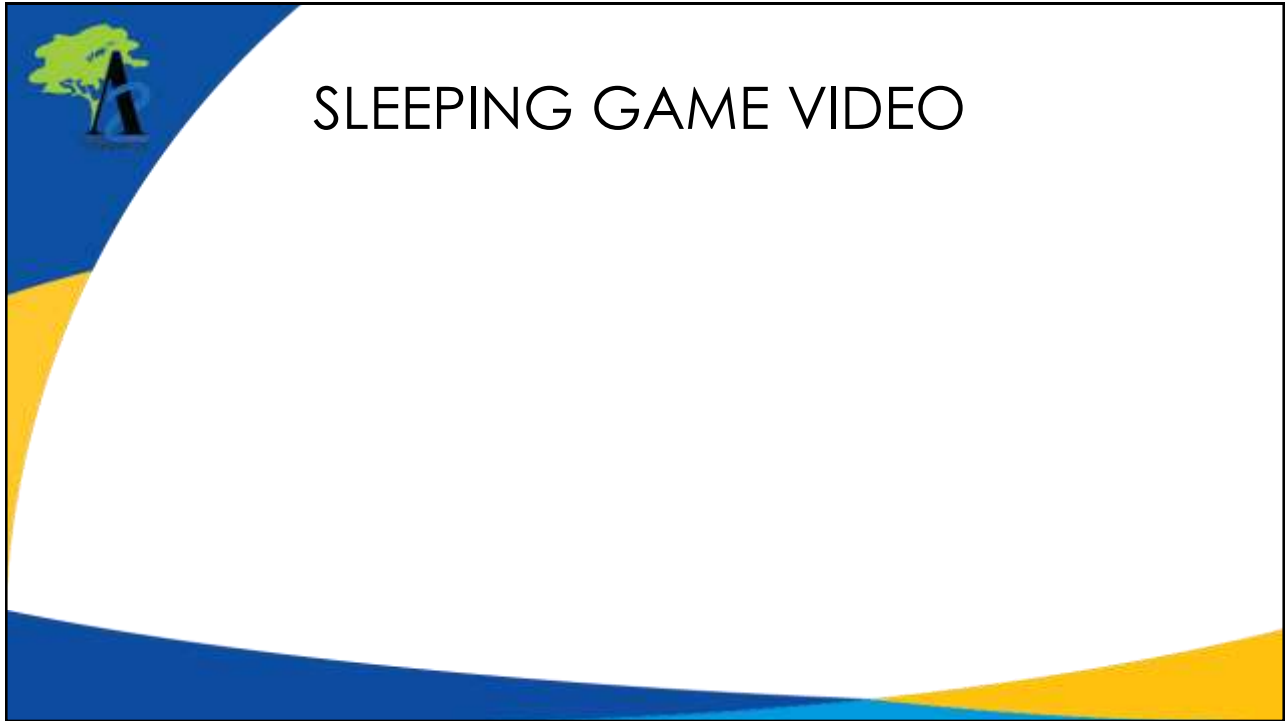
- **Indoor and Outdoor Free-Play**
- **Indoor and Outdoor Structured Play**
- **Social Behaviors Associated with Play**

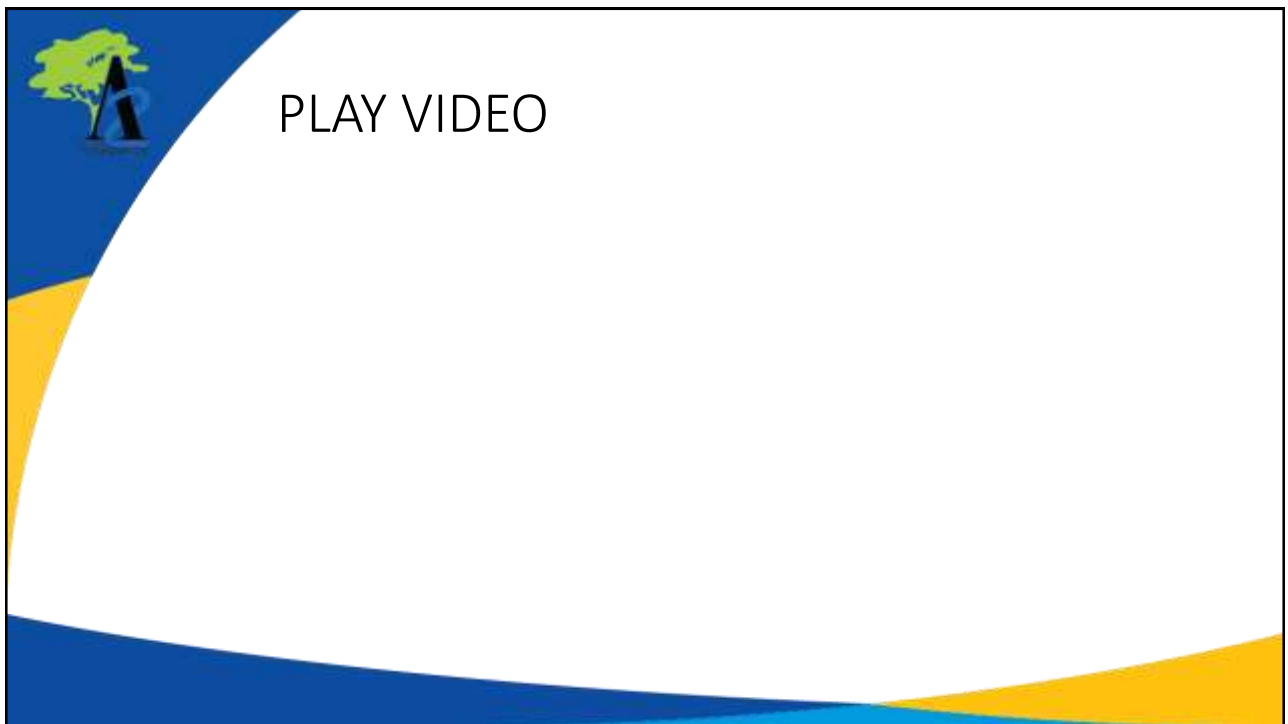
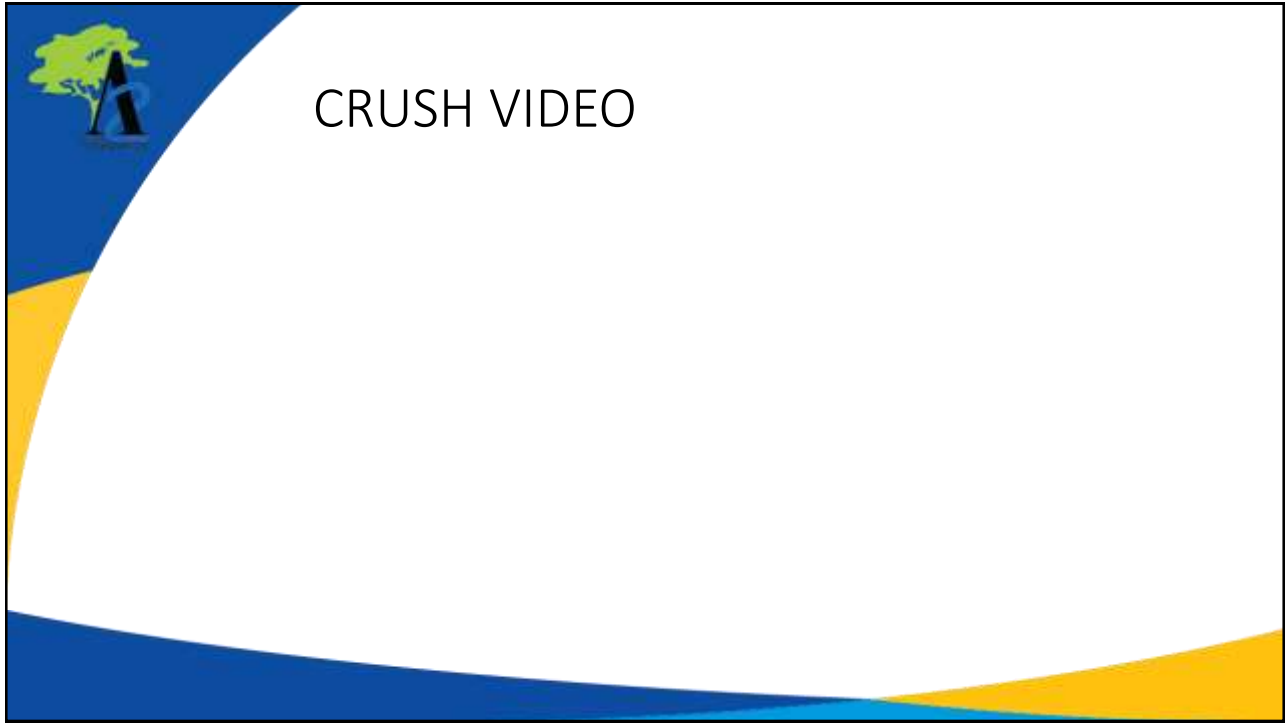


PLAY INFERENCES VIDEO



MOUSE TRAP 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

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A comparison of data collection techniques used with discrete trial teaching

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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 sample, and estimation. The data collection was conducted by behavior interventionists while teaching children diagnosed with autism spectrum disorder skills using discrete trial teaching. Including a counter-balance of design, data collection techniques were examined in regards to their accuracy, that is, their correspondence to the independent measurement of a primary observer collecting contemporaneous trial-by-trial data. Also assessed were the relative impacts of the various techniques on efficiency of therapy and rate of children's acquisition. Finally, interventionists rated their preference of and satisfaction with each of the three techniques. Continuous recording was generally the most accurate, although the other methods were accurate to a degree when used by trained recorders to justify their usage in applied settings. Estimation was the most efficient and time sample was the most preferred.

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One of the cornerstones of applied behavior analysis (ABA) is the reliance on objective, contemporaneous observational measurement (Baer, Wolf, & Riley 1988; Cooper, Heron, Howard, 2007). The use of objective measurement has enabled systematic and reliable analysis of treatment procedures. For children with autism spectrum disorder (ASD) this has yielded a wide range of treatment programs, protocols, and procedures that have been demonstrated to produce profound improvement (Levasse, 1987; Leaf & McEachin, 1989). Data collection tools and methodologies have been refined over the years, and those in current widespread use for capturing important dimensions of behavior include continuous recording (Leaf, Sheldon, & Sherman, 2010), time-interval (Repp, Roberts, Slack, Repp, & Berkler, 1976), frequency (Kamps et al., 1992), duration (Cooper et al., 2007), and ratio (Adelman & Hagopian, 1995) recording.

One teaching methodology that is commonly implemented with children on the autism spectrum, and that relies heavily on objective data collection, is discrete trial teaching (DTT) (Levasse, 1987). During DTT, the target behavior or skill is broken down into small instructional episodes called trials. Each trial begins with the teacher providing a discriminative stimulus, then the learner is provided a time-limited opportunity to respond. Finally, the teacher provides feedback to the learner for his or her response (e.g., reinforcement for a correct response and corrective feedback for an incorrect response). An optional fourth step is for the teacher to prompt the learner so that he or she may display the correct response. There is a brief inter-trial interval that separates trials from each other and the length of the interval largely determines the pace of instruction. Within the inter-trial interval or at the end of the instructional session, the teacher records the learner's responses to track his or her skill acquisition. The teacher has a number of options for data recording methodology, which we will now describe.

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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 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

