A Multi-tiered Model for Preventing Challenging Behaviors of Students with Autism

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Site of the "USF-Reno Campus"

Purpose of Presentation

- Describe a multi-tiered framework for preventing problem behaviors
- Describe a tertiary model for addressing the most serious problem behaviors: "Prevent-Teach-Reinforce (PTR)"

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Agenda

- Introduction
- A Model of Prevention
- Prevent-Teach-Reinforce (P-T-R)
- Research on the P-T-R Model
- Conclusions

Problem Behaviors

- Destructive Behaviors
  - Aggression; SIB; Property Destruction
- Disruptive Behaviors
  - Long tantrums; Loud, Repetitive Noises; Running, etc.
- Irritating & Interfering Behaviors
  - "self-stim;" repetitive and perseverative speech or actions, etc.
- Social Withdrawal
  - Lack of responsivity and initiations

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Importance of Problem Behaviors

- Barrier to Inclusion, Community Participation, and Social Opportunities
- Most Significant Impediment to Education
- Present Physical & Emotional Risk for Individual and for Families, Teachers, Other Professionals, Peers and Friends
- ----------
- Need to Prevent/Resolve Challenging Behaviors as Early and as Thoroughly as Possible

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Prevention

A multi-tiered framework for preventing problem behaviors and building social, communicative and emotional competence

Multi-tiered Prevention Frameworks

- Increasingly common in community and behavioral health disciplines
- Basic framework has 3 levels:
  - (1) Universal strategies (primary prevention)--- for everybody; low intensity prevention practices
  - (2) Targeted strategies (secondary prevention) --- for particularly high risk groups; higher intensity
  - (3) Indicated strategies (tertiary prevention/intervention)--- for individuals already affected by problem; usually intensive and individualized strategies

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Preventing Problem Behavior for Children with ASD

Prevention – Universal (Level 1)

- Positive Relationships
  - Nurturing, secure, stimulating, instructional
  - Enhances influence of adult caregiver
- Physical and Emotional Health
  - Physical health and nutrition
  - Social-emotional well being
    - Safe, responsive, friendly, stimulating and comprehensible environment

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Prevention – Level 1 Practices

- Adult-child interactions
  - Positive attention
- High quality environment
  - Structure, routine, schedule, predictability
- Ongoing instruction
  - Useful communication
  - Social skills
  - Clear, consistent behavioral expectations

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Level 2 Prevention Practices

- Differences from Level 1 Practices
  - Intensity of Intervention
  - Planfulness of Intervention
  - Intensity of Data Collection
  - Intensity of Family Involvement
- For children at high risk for problem behavior:
  - Parent training classes
  - Social-emotional teaching curricula

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Building Functional Competencies

- Interventions focused on teaching and building appropriate engagement
- Intervention supports for enhancing motivation
  - e.g., Pivotal Response Training
- Group strategies (classroom models) with direct focus on teaching and motivating social interaction
  - e.g., LEAP; Project DATA; Walden

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Level 3 (Tertiary) Practices - Intensive Individualized Interventions

- Are used for children with persistent and severe problem behavior
- Are used when children do not respond to preventive practices, child guidance procedures (e.g., redirection), or social-emotional teaching strategies
- Children with multiple, severe risk factors
  - Intellectual-Communicative Disability (e.g., autism)
  - Exposure to substances, violence, depression, poverty, etc.,

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General Approach

- Teaming, Planning
  - Goal Setting; Definition of Roles
- Functional (Behavioral) Assessment
- Development of Behavior Support Plan
- Implementation and Evaluation of BSP

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Core Elements of a Behavior Support Plan

(Linked to Assessment Information)

Prevention Strategies – Arrangements of antecedent environment

Teaching Strategies – Building skills to teach throughout the day to replace the problem behavior

Reinforcers – Providing effective reinforcement schedules (contingency management)

+ Evaluation strategies

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Prevent-Teach-Reinforce

A Standardized and Individualized Model

For School-based Interventions

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Purpose of P-T-R

- To provide schools with a standardized, easy-to-use model with which to apply research-based, behavioral strategies for addressing the most serious problem behaviors of students.
  - For all students with serious problem behaviors --- special education, general education.
  - Intended for pre-K through high school, however research has just been conducted in grades K-8

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PTR Model

- Research-based Practices
  - Assessment and Intervention
- Team-driven decision-making
- Steps are scripted as much as possible
- Each step ends with self-evaluation (checklist)
- Selection of interventions is menu-driven
- Entire process is manualized

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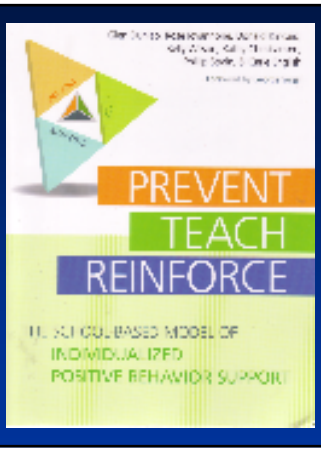

The PTR Model

- 5-Step Process
  - Developing a Team
  - Establishing clear goals (short and long term)
  - Functional Assessment
  - Designing and Implementing a Behavior Intervention Plan
  - Evaluation (ongoing) and Revision (as necessary)

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Step 1: Teaming

- Purpose: Establish group involved with developing and implementing intervention
- Members: Teacher(s), Para-educator(s), School professionals, Family members, etc.
  - 3-8 individuals
  - At least one administrator who can deliver resources and develop/interpret policies
  - At least one person knowledgeable in behavioral theory and principles and experienced in FA and BIP

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Step 2: Goal Setting and Data Collection

- Purpose: (1) to establish clear long and short-term objectives; (2) to establish a unified vision for desired outcomes; (3) establish feasible strategies for valid data collection
- Kinds of goals: (1) Reducing specified problem behaviors; (2) Develop academic competencies; (3) Improve social competencies, problem solving, and interpersonal relations/interactions

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Data Collection

- Data instrument(s) decided by team
- Recommendations are often for Behavior Rating Scales –
  - Usually 5-point scales with specific anchors indicating frequencies, durations, and/or intensities of problem behavior

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Step 3: Functional Assessment

- Purpose: Identify function(s) and antecedent variables influencing target behavior(s)
- Strategy: (1) Detailed, structured questionnaires for each team member focused on antecedent variables, functions, and maintaining consequences. (2) Team meeting to produce consensus.
- Outcomes: Hypothesis statement(s) with each component specified.

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Examples of Assessment Questions: "Prevent"

Are there *times* of the school day when problem behavior is most likely to occur?

- Morning
- Afternoon
- Before Meals
- During Meals
- Arrival
- Dismissal
- Other_____

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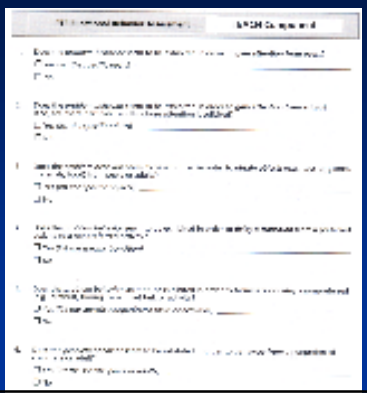
Examples of Assessment Questions: "Teach"



Examples of TEACH Questions

- Does the problem behavior seem to be exhibited in order to *gain attention from peers*?
  YES____ NO____
  – If yes, list specific peers….
- Does the problem behavior seem to be exhibited in order to terminate or delay a nonpreferred task or activity? YES___ NO___
  -- If yes, list specific tasks/activities

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Examples of Assessment Questions: "Reinforce"

What consequences usually follow the student's problem behavior?

- Calming/soothing
- Sent to time out
- Sent to office
- Assistance given
- Activity terminated
- Activity delayed
- Verbal redirect
- Physical guidance
- Restatement of rules
- Head down
- Removal of reinforcers
- Other_____

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Step 4: Intervention Design and Implementation

- Purpose: To build a Behavior Intervention Plan (BIP) based on FA information
- Features:
  - (1) BIP must include *at least* one strategy from each of the 3 components: **Prevent, Teach, Reinforce**
  - (2) Menus of research-based strategies for each component; forms and templates to build plan
  - (3) Selection of strategies is made by team, based on FA and on team's ability/resources to implement

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Evaluation

- Purpose: (1) Measure effects of intervention on problem behaviors and academic/social behaviors; (2) Measure fidelity of implementation
- Features: Simple (easy-to-use) instruments --- behavior rating scales; checklists; etc.

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Research on PTR

- Randomized Control Group Evaluation
  - Including students with ASD
- Case Study (A-B) Analyses
  - Behavior rating scale (BRS) data
  - Direct observation data
- Multiple Baseline Across Participants (with ASD) Design

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A Randomized Control Evaluation of PTR

Iovannone, Greenbaum, Wang, Kincaid, Dunlap, & Strain, (2009), *Journal of Emotional and Behavioral Disorders, 17, 213-225*

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Participants

- N = 245 students
  - Randomly assigned to PTR or Services as Usual
- Nominated as the students with the most serious problem behaviors in their class
- Grades K-8; from 5 school districts in FL and CO
- Ages 4-15 (X = 8.17)
- 48% had IEPs; 33% in self-contained special education programs
- Variety of Disability labels, including ASD (N = 25)
- 50% White; 29% Hispanic; 18% African American
- 38% on free or reduced-price lunch programs

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Procedures

- All Assessment and Intervention Steps Carried out by School-based Teams
  - Almost all interventions conducted by students' teachers
- Process facilitated by PTR research staff and implementation manual
- Data collected by Teachers and by PTR staff

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Principal Measures

- Social Skills Rating System (SSRS)
  - Problem Behavior subscale
  - Social Skills subscale
- Academic Engaged Time
- Social Validity (Treatment Acceptability Rating Form; Reimers and Wacker)
- Fidelity of Implementation

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Results

- Social Skills --- Difference in standard scores from baseline to post-test:
  - PTR = + 7.38; SAU = + 1.25 ($p < .001$)
- Problem Behavior --- Difference in standard scores from baseline to post-test:
  - PTR = - 5.30; SAU = - 0.76 ($p < .001$)
- Academic Engaged Time --- Difference in rates from baseline to post-test:
  - PTR = + 0.13; SAU = + .02 ($p < .001$)

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- Fidelity: Data showed that almost all teachers (> 80%) were able to implement the intervention plans with high fidelity
- Social Validity: Data on the TARF showed that teachers found the PTR process to be highly acceptable and efficacious. Teachers were very willing to use the PTR process in the future.

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Time Series Analyses

1) BRS case study data
   - From Dunlap et al (2010; JPBI)
2) A-B direct observation data – examples
   - Iovannone et al (unpublished)
3) Multiple baseline across participants
   - Strain, Wilson, & Dunlap (in preparation)

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Behavior Rating Scales

- 5-point scales
- Anchors specify amplitude on relevant dimension (frequency, duration, intensity)
- Teachers and school-based teams define behaviors and anchors on individual basis
- Scales completed retrospectively at end of each session

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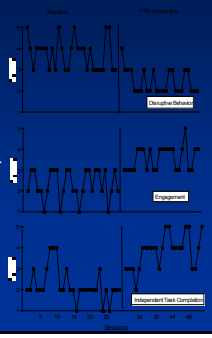
Teacher's Ratings of Mike's Behavior

Disruptive Behavior

Engagement

Task Completion

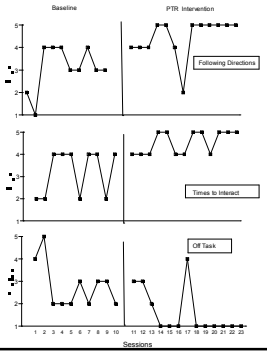


Teacher's ratings of Jose's Behavior

Following Directions

Appropriate Interactions

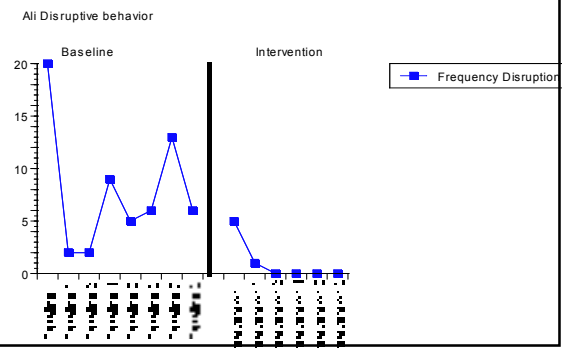
Off Task Behavior



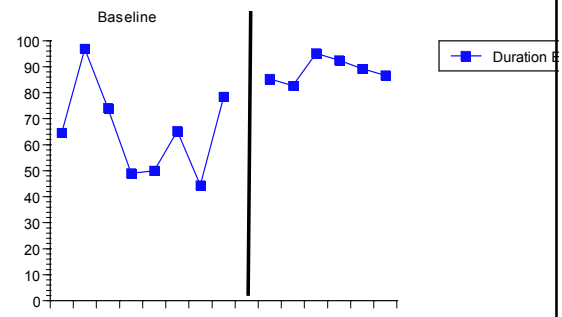
Ali (Iovannone et al., unpublished)

- 6 years old
- Autism; nonverbal; significant intellectual disability
- Self-contained Spec Ed classroom
- BIP..
  - P: curricular modifications; small task steps; choice making; etc.
  - T: Request attention; Request break; Delay of S^{R+}
  - R: Music as reinforcer; 30s intervals

Ali's Disruptive Behavior - Frequency



Ali's Engagement - Duration



Multiple Baseline Analysis - Participants

- 3 students with ASD; Josh, Alex, Jasmine
- Kindergarten; Grade 2; Grade 4
- Cognitive functioning = Typical to mild delay
- All had verbal language, but often not used effectively
- Majority of time in general education classes
- All had frequent problem behaviors; identified as students with most serious problems
  - property destruction; disruptive behavior, outbursts, crying, some aggression

Procedures

- Baseline (services as usual)
- PTR = Independent Variable
  - Teaming, goal setting, data collection (BRS)
  - PTR (Functional) Assessment
  - Individualized Behavior Intervention Plans
- Data for study obtained from video recordings
  - 15 minute sessions in regular classroom context
  - 10-second time samples
  - % of samples with occurrence of behavior
- Dependent Variables
  - Problem Behavior
  - Engagement

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Behavior Intervention Plans

- JOSH
  - P = explicit expectations on card
  - T = instruction on expectations; self-management
  - R = self-recruited S^{R+}; praise for following expectations; "tokens" with stickers/treasures as back ups
- ALEX
  - P = written schedules
  - T = self-management (using lists for independent responding)
  - R = sea shells + time to examine his sea shells

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BIPs (continued)

- JASMINE
  - explicit expectations/instructions for social interaction
  - instruction on social interactions; problem solving; and self-monitoring (journal)
  - "CIA (caught in the act)" credits

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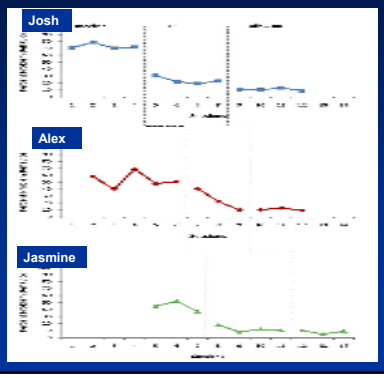
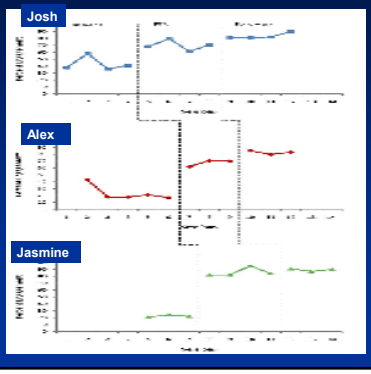
Problem Behavior (% Intervals)



Engagement (% Intervals)



Conclusions

- In a large RCT, the PTR process has been shown to be effective, when implemented by typical, school-based teams, in: reducing problem behavior and increasing social skills and academic engaged time compared to "services as usual." PTR was also shown to be implemented with fidelity and "approved" by teachers
- Data have also shown PTR to be effective when applied with some students with autism (multiple baseline analysis)

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- However, PTR has not yet been demonstrated in conditions without "expert" facilitators
- In addition, there are students for whom PTR was not as effective as we would like… and we have yet to examine the (mediating) conditions under which the process is more (and less) effective.

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- As always, there is much more to learn, and much to improve upon…
- Hopefully, though, we will see better outcomes for students with ASD with:
  - A Greater Focus on Prevention, and
  - Enhanced Fidelity to What We Know Works – such as with PTR.

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