



# Utah Classroom Models for Teaching Children with Autism

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Superheroes social skills training, Rethink Autism internet interventions, parent training, EBP classroom training, functional behavior assessment: An autism spectrum disorder, evidence based practice (EBP) training track for school psychologists

US Office of Education Personnel Preparation Grant H325K12306

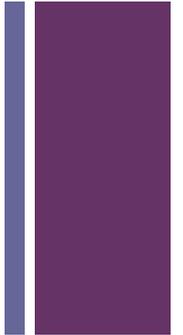
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Grant Director: Julia Hood

University of Utah - School Psychology



# Six Utah Models



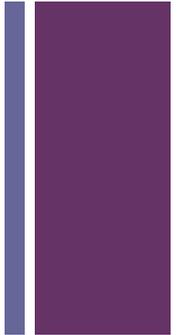
## ■ ABA Based

- Carmen B. Pingree Center Model
- Autism Support Services: Education, Research, and Training (ASSERT)
- Strategies for Teaching based on Autism Research (STAR)
- Learning Experiences and Alternative Program for Preschoolers and their Parents (LEAP)

## ■ Non-ABA Based

- Play and Language for Autistic Youngsters (PLAY)
- Relationship Development Intervention (RDI)

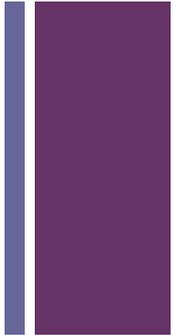
# + Applied Behavior Analysis (ABA)



- Based on the work of B.F. Skinner.
- Ivar Lovaas developed standardized teaching techniques to utilize ABA- referred to as the “Lovaas Method”
- Clear on-set and off-set to each trial
- Shapes specific behaviors



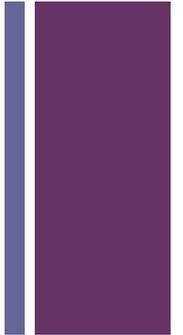
# Carmen B. Pingree Center Model



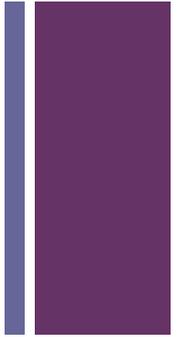
- Named after Carmen B. Pingree, a parent of a child with autism
- In the late 1970's, she embarked on a mission to obtain funding in order to open a pre-school for children with autism in the state of Utah.
- On November 21<sup>st</sup>, 2002, the vision for a school to specifically serve children with autism became a reality, and the Carmen B. Pingree Center for Children with Autism was opened.
- 70 preschool aged children and 80 elementary school children
- 10 to 12 students per classroom with an adult to student ratio of 2:1 up to 5:1

# + The Pingree Curriculum

- Core Management Skills
  - Get Ready!
  - Following Directions
  - Generalized Imitation Program
- More Complex Abilities
  - Cognition
  - Social abilities
  - Language
  - Fine/gross motor
  - Self-help
  - Academics
- The Pingree Model incorporates other Evidence Based Programs, such as TEACCH and PECs.



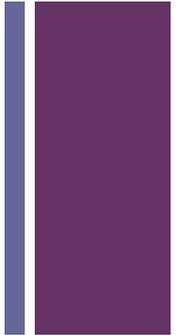
# + Training and Education of Autistic and related Communication-Handicapped Children (TEACCH),



- Developed in the early 1970's at the University of North Carolina by psychologist Eric Schopler
- Specific areas dedicated to whatever activities occur in that part of the room
  - Individual work, group activities, play
  - At work stations, complete specified activities such as matching letters or numbers
- Visual supports used to help students transition between activities



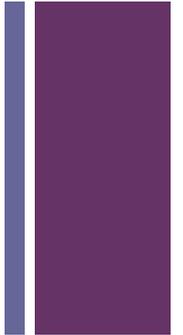
# Picture Exchange Communication System (PECS)



- Allows children with little to no speech to communicate their wants and needs with pictures and symbols
  
- Six phases of PECS:
  - 1) Physical exchange
  - 2) Expanding spontaneity
  - 3) Picture discrimination
  - 4) Sentence structure
  - 5) “What do you want?”
  - 6) Commenting

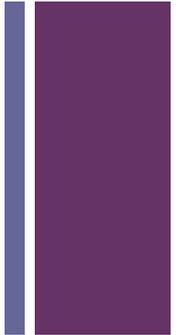
# + ASSERT Model

- Collaborative effort between the Department of Special Education and Rehabilitation and the Center for Persons with Disabilities at Utah State University
- Dr. Thomas Higbee- Utah State University
- For preschool age- elementary age in the works
- The program's three-fold mission
  - Education: To provide effective educational and behavioral early interventions using research based best practices
  - Research: To conduct research to improve educational and behavioral interventions for children with autism
  - Training: To serve as a model training classroom for USU preschool services special education teachers and to provide training opportunities for other educational professionals throughout the state of Utah who are interested in learning to work effectively with children diagnosed with ASD.



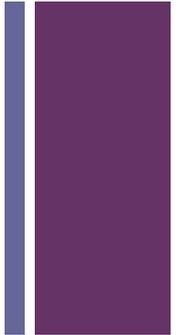
# + ASSERT Curriculum

- Several skill areas that range from beginning to advanced
- Learner Readiness
  - Instructional readiness, nonverbal imitation, receptive actions, block imitation
- Self-Help Skills
- Basic Language Skills
- Advanced Language Skills
- Academic Skills
- Social/Play Skills
- Community Skills





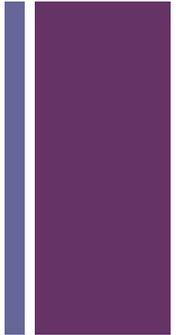
# Preference Assessments



- Stimulus Preference Assessment (SPA)- method that allows the teacher to identify potential reinforcers that may be most effective for a specific child
  
- Single-item method
  - items of reinforcement placed before the individual one at a time, multiple times each
  
- Paired stimulus method
  - reinforcer items presented to the child in pairs; the first item the child touches is scored as their preferred reinforcer
  
- Multiple stimulus method
  - all potentially desirable reinforcers presented to the child
  - When the child chooses a particular item, it is removed from the array of choices, and the process continues until all of the items have been selected.



# Naturalistic Teaching Strategies

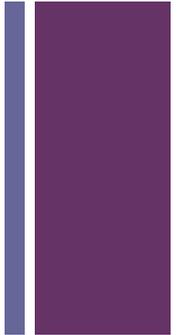


- Promote generalization by providing students with learning opportunities in a more natural way.
- Although they may appear natural and non-scripted, they are actually carefully planned and intentional.
- Incidental teaching
  - arrange the environment in a way that is fun and interesting
- Time-delay prompts
  - place a desired item in front of the child while simply giving an expectant look
- Purposefully interrupting chains and routines
  - withholding a desired (or necessary) item or making a “silly” mistake





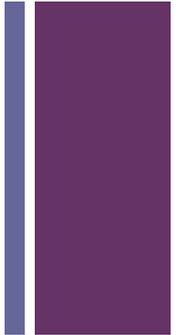
# STAR Model



- Began in 1973 when Dr. Joel Arik and Dr. David Krug began working with children with autism
- Developed a program used for over 20 years to teach children with autism
- This program used strategies of discrete trial training, augmentative systems of communication, and teaching independence.
- At the request of several school districts, Dr. Arick began working with Lauren Loos, MS, and Dr. Ruth Franco to develop the STAR program in 1997.



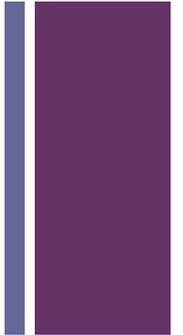
# STAR Curriculum



- 6 key areas: receptive language, expressive language, spontaneous language, functional routines, academics, play, and social skills
  
- Level 1
  - Difficulties following simple commands, little to no language, and little social interaction
  - Purpose: basic language, simple routines, class participation
  
- Level 2
  - Difficulty with 2 step commands, single words, simple routines
  - Purpose: learn 2 step commands, learn verbs, play interactively, identify letters and numbers, answer “wh” questions
  
- Level 3
  - Can use two or more words (or symbols), label objects, and few sight reading words, follow most classroom routines
  - Purpose: expand vocabulary/ phrase length, higher academics



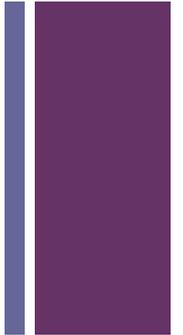
# Pivotal Response Training (PRT)



- Based on a 4-step sequence
  - 1) Instructional cue, 2) Child response, 3) Consequence (generally a positive reinforcer), 4) Pause for the child to respond
- Child chooses the activity and the reinforcer is simply a natural consequence of the behavior
- Activities incorporated into the environment in a functional way
- Allows for generalization by giving the child opportunities throughout the day across various situations to practice target skills
- Example: Snack time

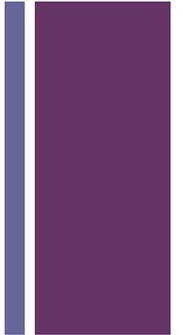
# + Functional Routines

- Children are taught purposeful routines
- Using the restroom, arriving at school, snack time
- Often the natural outcome is reinforcing by itself, but children with autism must be formally taught these skills.
- Provide a meaningful context for using, generalizing, and maintaining skills





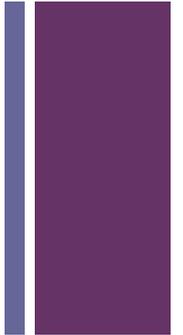
# LEAP Model



- Began in 1981 in Pittsburg, PA; became federally funded in 1983
- At this time, LEAP was one of the only early childhood programs in the country that was committed to inclusive practices for young children with autism.
- For children between the ages of 3 and 5
- 1998- actual LEAP site was created in Colorado
  - Cooperative effort between the Colorado Department of Education, the University of Colorado, and the Douglas county school district



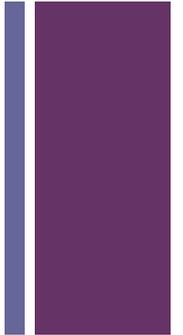
# LEAP Curriculum



- Integrated preschool
  - More similar to a typical preschool classroom than a classroom found in the Pingree Center or ASSERT program
  - Visual props and schedules, the use of concrete materials, and the use of augmentative systems for communications (such as PECS)
  - Divided up into clear interest areas such as blocks, dramatic play, or table toys-interest areas clearly labeled with visual prompt
  - Photographic classroom schedule posted at the front of the classroom
  - works best when combined with a curriculum to be used in preschool that focuses on general skills
- Family involvement program
- National outreach training activities



# LEAP Social Skills

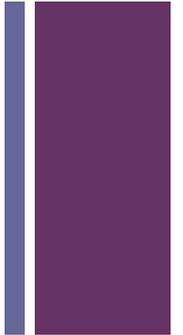


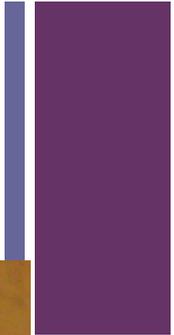
- Five topics: getting a friend's attention, giving toys, requesting toys, play organization (“You can be the mommy, and I’ll be the baby.”), and giving a compliment
  - Teacher first describes the skill
  - Models the “right” way and the “wrong” way to perform the skill
  - Student models with the teacher in front of the class
  - Two students model for the class- reinforcement awarded
- Super Stars: for demonstrating the skill in the clear on-set off-set or the natural classroom environment



# Other Strategies

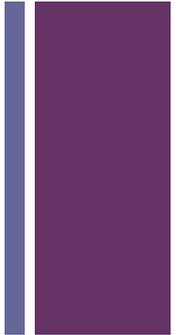
- Family-style snack: “snack captains” distribute the snack; provides more opportunities for social interaction between the students
- Limit play materials (forces students to share)
- Structure thematic play activities
  - Dramatic play- bakery
  - Block- construction site
- Teachers pay attention and provide cues





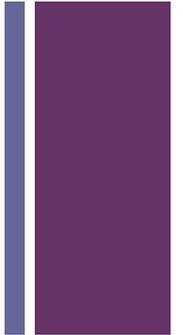
# + Developmental Individual Differences/Relationship Based (DIR)

- Describes the final two models
- Instead of focusing on skills and isolated behaviors, DIR seek to strengthen a child's emotional, social, and intellectual capacities by building healthy foundations in these areas using more naturalistic methods.
- 6 developmental milestones:
  - Self-regulation and shared attention
  - Engagement
  - Two-way communication
  - Complex two-way communication
  - Shared meanings and symbolic play
  - Emotional thinking





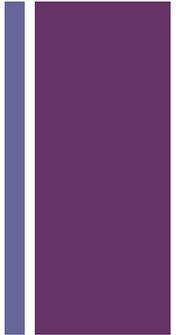
# PLAY Model



- Geared towards children 15 months to 6 years old
- Founded in 2001 by Dr. Richard Solomon, MD
- Started in Ann Arbor, Michigan as a response to an extreme lack of intensive services for children with autism
- Dr. Solomon worked closely with Ivar Lovaas in Pennsylvania providing ABA therapy
- More play based component to such intensive services
- PLAY addresses social impairment- progressively encouraging social interaction and teaching to play appropriately



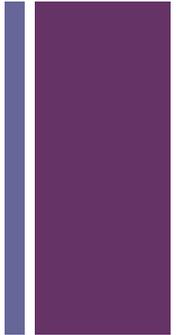
# PLAY Curriculum



- List principals and strategies based on the comfort zone, sensory profile, and the functional developmental level of the child
- Assess child's unique abilities and limits in terms of their comfort zone, sensory profile, and developmental level
- Define daily and weekly curriculum activities
  - Gently shaking arms, swinging, tickling, etc.
  - More advanced- puzzles, blowing bubbles, finger paint
- Child centered- follow their lead
- Menu of techniques to engage the child in play- as simple as just being with the child
- Critically review activities and techniques to determine progress



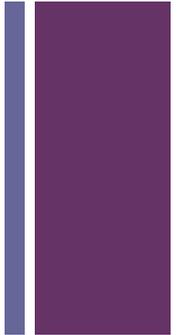
# PLAY Home Consultation



- Home Visit (recommended)
  - Home consultants provide monthly, three hour long visits in which they model techniques, coach the parent, and provide them with feedback.
  - Video taping, coaching, modeling, and feedback
- Office/Clinic Visit
  - One 60 to 90 minute every week or every 2 weeks
  - Video taping, coaching, modeling, and feedback
- Essential to teaching the parents to effectively engage with their children and develop a better connection with their child through play
- Parents play 15-25 hours each week (at least 2 hours/day)
- When home consultation is utilized, the average cost of this intervention per year is \$2500.

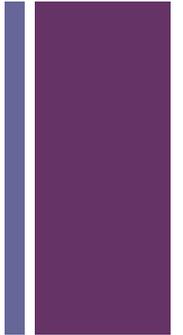
# + Floortime

- Developed in the 1980's by Dr. Stanley Greenspan
- Therapeutic technique which incorporates play activities, often on the floor
- Facilitators meet the child at whatever developmental level they are at and then build upon their strengths.
- “Circles of communication”
  - Started when someone attempts to communicate or engage with the child
  - Completed when the child elicits a response
  - Adult smiles at the child, the child smiles back=complete circle





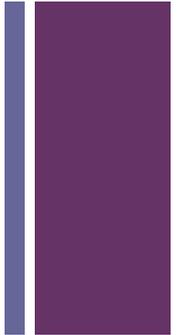
# RDI Model



- Developed by psychologist Steven Gutstein, PhD
- Two books of RDI-based activities as well as a book explaining the background ideas were published in 2002
- “Dynamic intelligence”
  - Ability to think flexibly
  - Essential to improving an individual with autism’s quality of life
- Primary aim of RDI-help individuals with autism build their personal relationships by gradually strengthening their building blocks of social connections
- Based on the idea that children with autism missed certain developmental milestones

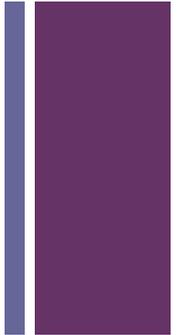
# + RDI Curriculum

- 3 main levels with stages within each level
- Level 1 “Novice”
  - Attend
  - Reference
  - Regulate
  - Coordinate
- Level 2 “Apprentice”
  - Variation
  - Transformation
  - Synchronization
  - Duet
- Level 3 “Challenger”
  - Collaboration
  - Co-creation
  - Improvisation
  - Running mates



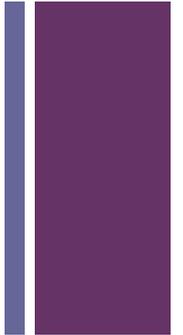
# + RDI 6 Objectives

1. **Emotional referencing:** The ability to learn from the emotional and subjective experiences of others
2. **Social coordination:** The ability to observe and control behavior to successfully participate in social relationships
3. **Declarative language:** The ability to use language and non-verbal communication to express curiosity, invite interactions, share perceptions and feelings and coordinate with others
4. **Flexible thinking:** The ability to adapt and alter plans as circumstances change
5. **Relational information processing:** The ability to put things into context and solve problems that lack clear cut solutions
6. **Foresight and hindsight:** The ability to anticipate future possibilities based on past experiences





# Other Components of RDI

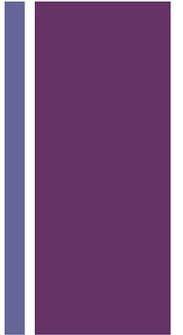


- Cost effective
  - Yearly treatment costs of RDI are approximately 1/5<sup>th</sup> of the cost of one-on-one traditional behavior intervention program
  - Parents are trained to carry out much of this intervention
  - Little need for secondary staff
- Broad in its scope of treatment
  - Very low functioning children to very high functioning children
  - Young children as well as adolescents
  - Any population experiencing social problems, including individuals with ADHD, Bi-Polar Disorder, Tourette Syndrome, or any learning disorder

| <b>Play-based/Developmental</b>                 | <b>Behavioral</b>                                  |
|---|--|
| <b>(The P.L.A.Y. Project, Floortime, Hanen)</b> | <b>(ABA, Discrete Trial)</b>                       |
| Strategic and Flexible                          | Highly Prescribed                                  |
| More Naturalistic                               | More Controlled                                    |
| Child Initiated                                 | Program Oriented                                   |
| Follows Child's Lead                            | Program Goals Dominant                             |
| Developmental Analysis                          | Behavioral Analysis                                |
| One-On-One and/or In Groups                     | One-On-One, then Groups                            |
| Early Generalization Common                     | Later Generalization Typical                       |
| Flexible Intensity                              | Intensity Prescribed                               |
| Activities: Child Preference                    | Activities: Program Oriented                       |
| Play Interaction                                | Teaching Drills and Skills                         |
| Natural/Social Reinforcements                   | Strategic Reinforcements                           |
| Perseverations as Useful                        | Perseverations Extinguished                        |
| Documentation Varies                            | Documentation Intensive, Discrete Frequency Counts |
| More Individualized                             | More Prescribed                                    |
| Peers Used Earlier                              | Peers Used Later                                   |
| Affect Emphasized                               | Behavior Emphasized                                |
| Parents as Play Partners                        | Parents as Program Facilitators                    |

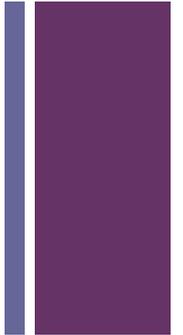
# + Research

- **Strain & Bovey II (2011). Randomized, Controlled Trial of the LEAP Model of Early Intervention for Young Children With Autism Spectrum Disorders.**
  - Clustered randomized comparison in which preschool classrooms matched on program dimensions
  - 27 classrooms from a variety of geographical settings implemented the LEAP intervention; 23 classrooms did not use the LEAP program-served as a comparison group
  - Children in the LEAP classrooms made significantly more progress than the children in the comparison group on measures of cognition, language, autism symptoms, problem behaviors, and social skills.
- **Solomon, Necheles, Ferch, & Bruckman (2007). Pilot study of a parent training program for young children with autism: *The PLAY Project Home Consultation program***
  - Cross-sectional design with pre and post data
  - 68 children with diagnosis of autistic disorder, PDD-NOS or Asperger syndrome according to the *Diagnostic and Statistical Manual (DSM-IV)* criteria
  - When rated clinically by the home consultants, 66 percent of the children rated made very good gains according to The Functional Emotional Assessment Scale (FEAS)



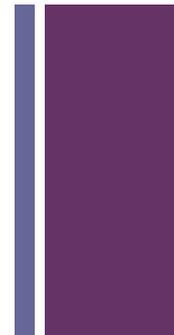
# + National Standards

- Research: treatments produce favorable effects
- Professional judgment: case-by-case basis; widely used
- Values and preferences: case by case basis
- Capacity: may be costly; each of these treatments are manualized and include a professional development component
- Established:
  - modeling (all programs), naturalistic teaching strategies (ASSERT, LEAP, RDI, PLAY), peer training (LEAP, RDI), pivotal response treatment (Pingree, ASSERT, STAR), and schedules (Pingree, ASSERT, LEAP)
- Emerging:
  - augmentative/alternative communication (Pingree, ASSERT), developmental relationship-based treatment (RDI, PLAY), language training (Pingree, ASSERT, STAR), PECS (Pingree, ASSERT), and social skills (LEAP, RDI, PLAY)





# Conclusions



- Each of these models contains elements that overlap with each other
- Dawson and Osterling (1997) common components:
  - teaching children to selectively attend to certain stimuli
  - imitate motor and vocal behaviors
  - receptive and expressive language
  - how to play with toys appropriately
  - social interaction skills
- Programs differ in which elements are emphasized
- Careful observation and data taking techniques in order to determine which program may allow the child to reach their maximum potential