Advances in Early Intervention

The Convergence of Developmental and Behavioral Interventions

Presented by Elizabeth Isralowitz, MA BCBA

Who are you?

- Raise you hand if you
  - Work with someone with autism
  - Work in early intervention
  - Work in field of Applied Behavior Analysis
  - Work in special education

A little about me…

- Masters in Early Intervention from Teacher's College
- BCBA from Manhattanville College and Calstate LA
- Worked in early intervention and special education for 10+ years.
- Clinical supervisor for ABA services
- Coordinator of Behavior Support Services at an NPS
- Now a PhD student and occasional consultant.

A Brief History of Early Intervention

The Nursery School: Rachel and Margaret MacMillian (Shonkoff & Meisels, 1990)

- Comprehensive, prevention-oriented services
- Focus on self-care, responsibility, and educational readiness skills.

Children at Risk: Maria Montessori

- Emphasized individualized self-teaching within a carefully laid classroom environment.

Early Intervention: A Field Divided

- Behaviorism and Applied Behavior Analysis (ABA)
  - Socio-Communicative Interventions, PRT (Koegal & Koegal), PECS (Bondy & Frost), NET, RDI, ACT
- Developmental
  - Socio-Communicative Interventions, RDI, etc…
- Psychodynamic
  - Relationship based interventions
  - Play therapy
- Early Childhood Education/Special Education
  - TEACCH
  - Developmentally Appropriate Practice
  - Inclusion
  - Thematic units and group routines

What Causes ASD and What We Can Do About it?

Dawson, 2008

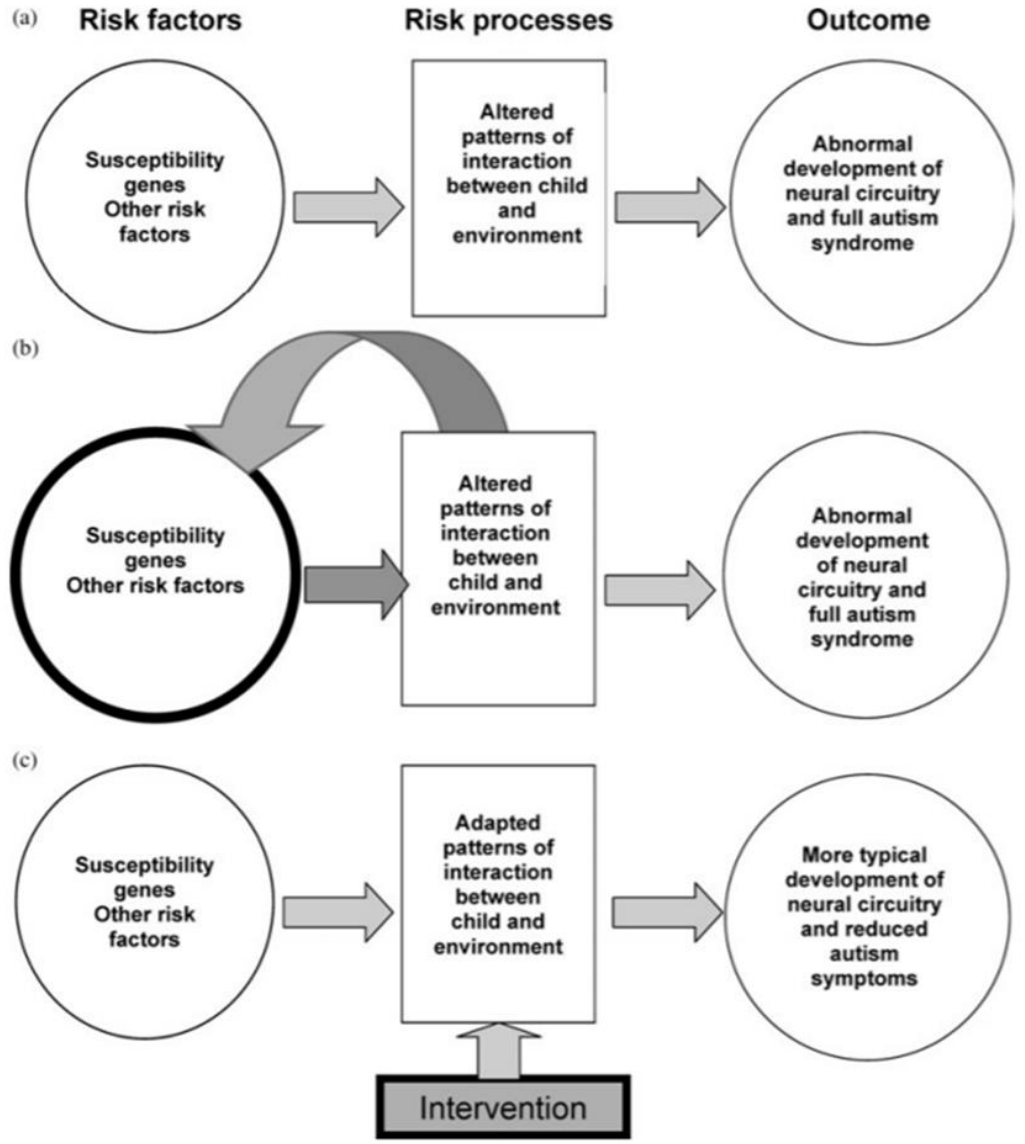


Figure 1. A developmental model of risk factors, risk processes, and outcome in autism.

Developmental Trajectory of ASD and Typical Development

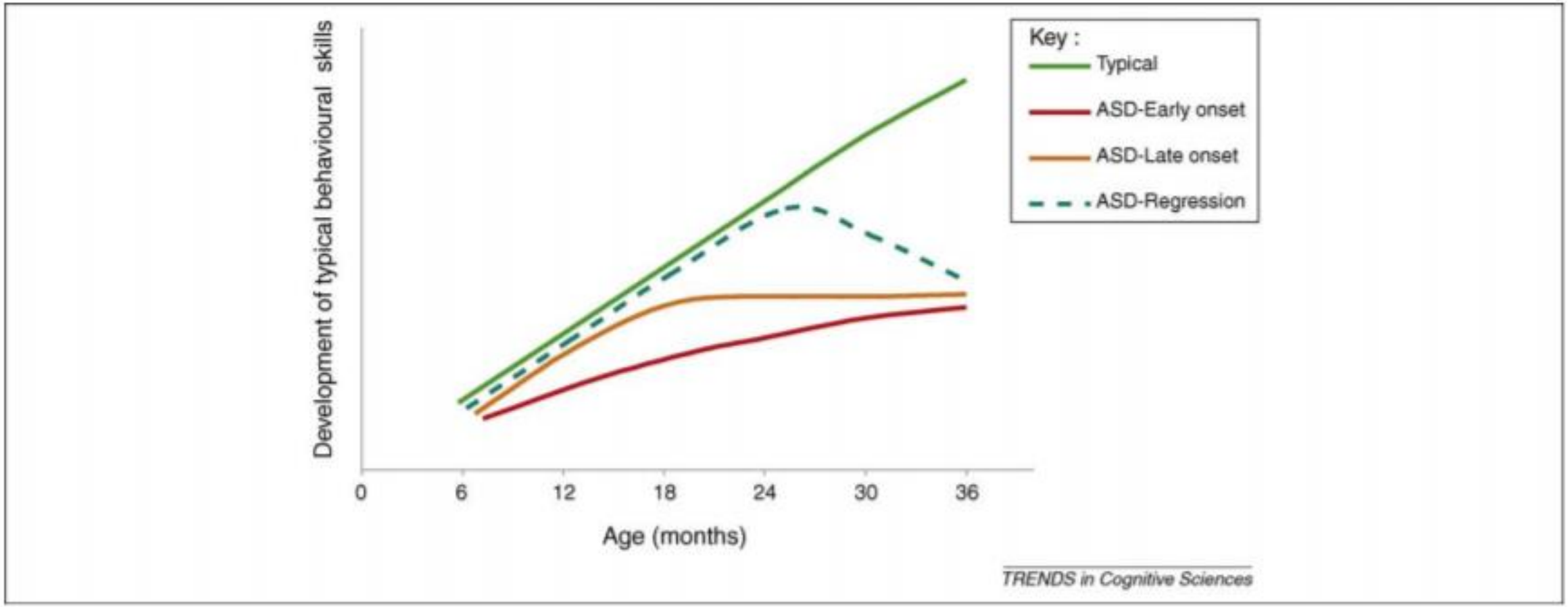


Figure 2. Siblings studies have highlighted variation in the nature and rate of change in behaviour in infants at risk. This has led to proposals of hypothetical variable trajectories as illustrated. Available findings support variability in onset of clear behavioural symptoms whereas the regression trajectory has not been established in infant siblings.

Elsabbagh &Johnson, 2009

Why Early Intervention Is Crucial

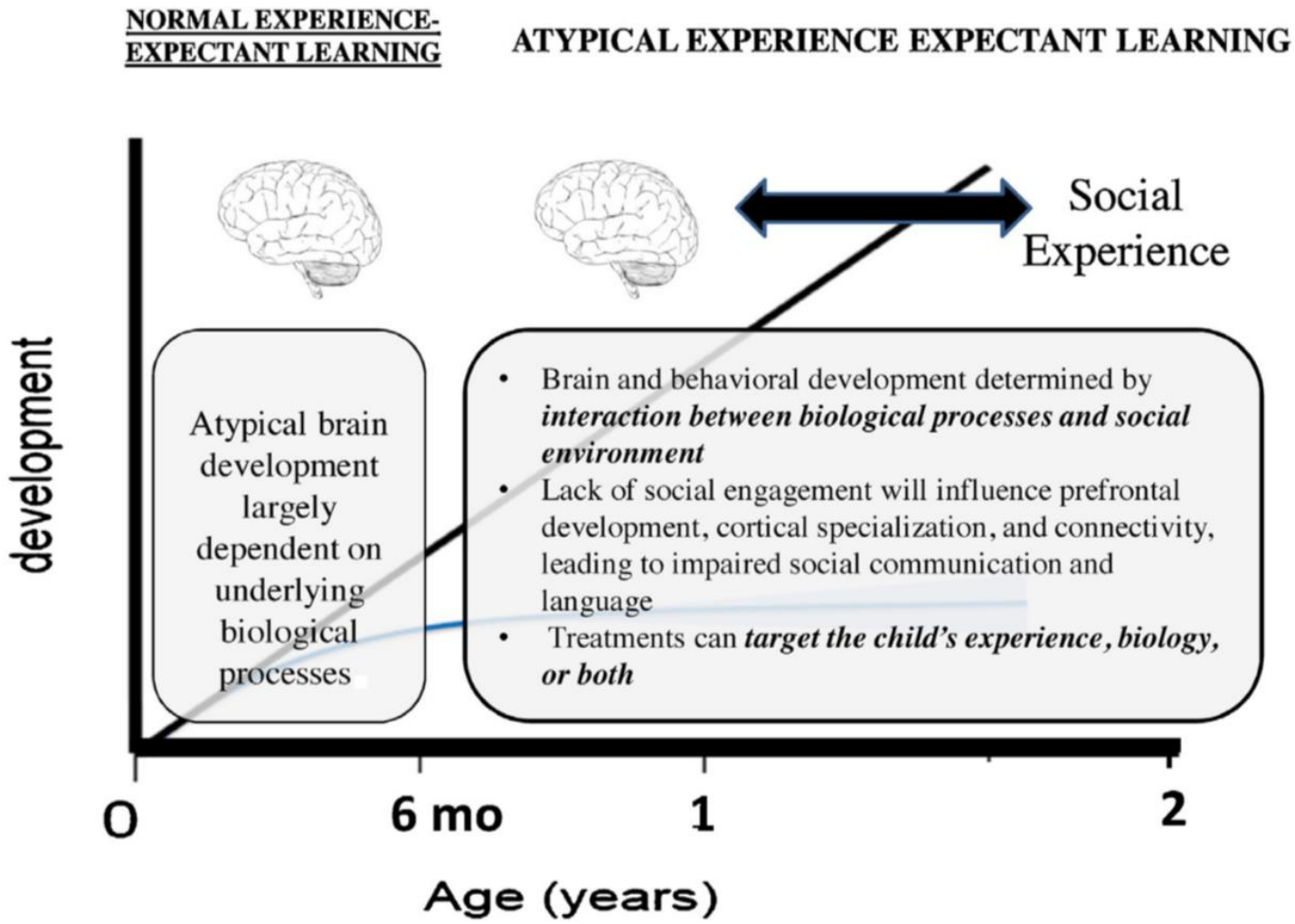


Fig. 1. Atypical brain and behavioral development in ASD.

Sullivan, Stone, & Dawson, 2014

Early Intervention Works!
But not all interventions are the same…

- Behavioral interventions generally refer to interventions from or influenced by the field of ABA.
- Lovaas first to show that early intervention can has a lasting impact on a child's developmental trajectory (Lovaas, 1987).
- Principles of ABA have been demonstrated in early parent child interactions such as vocal imitation and motherese with typical infants and infants at risk for developing autism (Palaez et al., 2011).
- Currently, behavioral interventions are the only evidence based interventions for ASD (American Academy of Pediatrics and National Research Council, 2014; Public Health Service. Office of the Surgeon General Center for Mental Health Services National Institute of Mental Health (U.S.), 1999).

When Worlds Collide: Naturalistic Developmental Behavioral Interventions

- Intervention/learning targets
  - Manualized practice with fidelity criteria
  - Individualized treatment goals
  - Ongoing measurement of progress
- Learning Context
  - Child-initiated teaching episodes
  - Environmental arrangement
- Instructional Strategies
  - Three part contingency (ABC)
  - Enhancing motivation and natural reinforcement
  - Prompts and prompt fading
  - Adult imitation of children's language, play, and movements
  - Broadening the attentional focus

Schreibman, et al., 2015

Intervention/Learning Targets

(Schriebman, et al, 2015)

- Manualized practice with fidelity criteria
- Individualized treatment goals
  - Goals are guided by developmental sequences
- Ongoing measurement of progress
  - Assessment
  - Systematic data collection to objectively measure and document progress and to aid in program and goal modification.

Learning Context

- Child-initiated teaching episodes
  - Following child's lead within structured environment, activity, etc…
- Environmental arrangement
  - How the adult sets up the environment to promote child initiations and to maximize learning.

Instructional Strategies

- Three part contingency
  - Antecedent-Behavior-Consequence

- Enhancing motivation and natural reinforcement
  - Reinforcement is related to the task and the child's goal
  - Dispersal of maintenance tasks
  - Reinforcing approximations
  - PLAY!

Instructional Strategies cont…

- Using prompting and prompt fading
  - Prompts may include
    - physical or hand over hand assistance,
    - physical contact or partial physical prompts,
    - visual prompts,
    - verbal prompts,
    - gestures,
    - **modeling,**
    - and other more subtle assistance such as position, proximity, expectant pause, and natural cues.

Instructional Strategies cont…

- Adult imitation of child's language, play, and movements
  - Used to increase child's responsivity and attention to the adult.

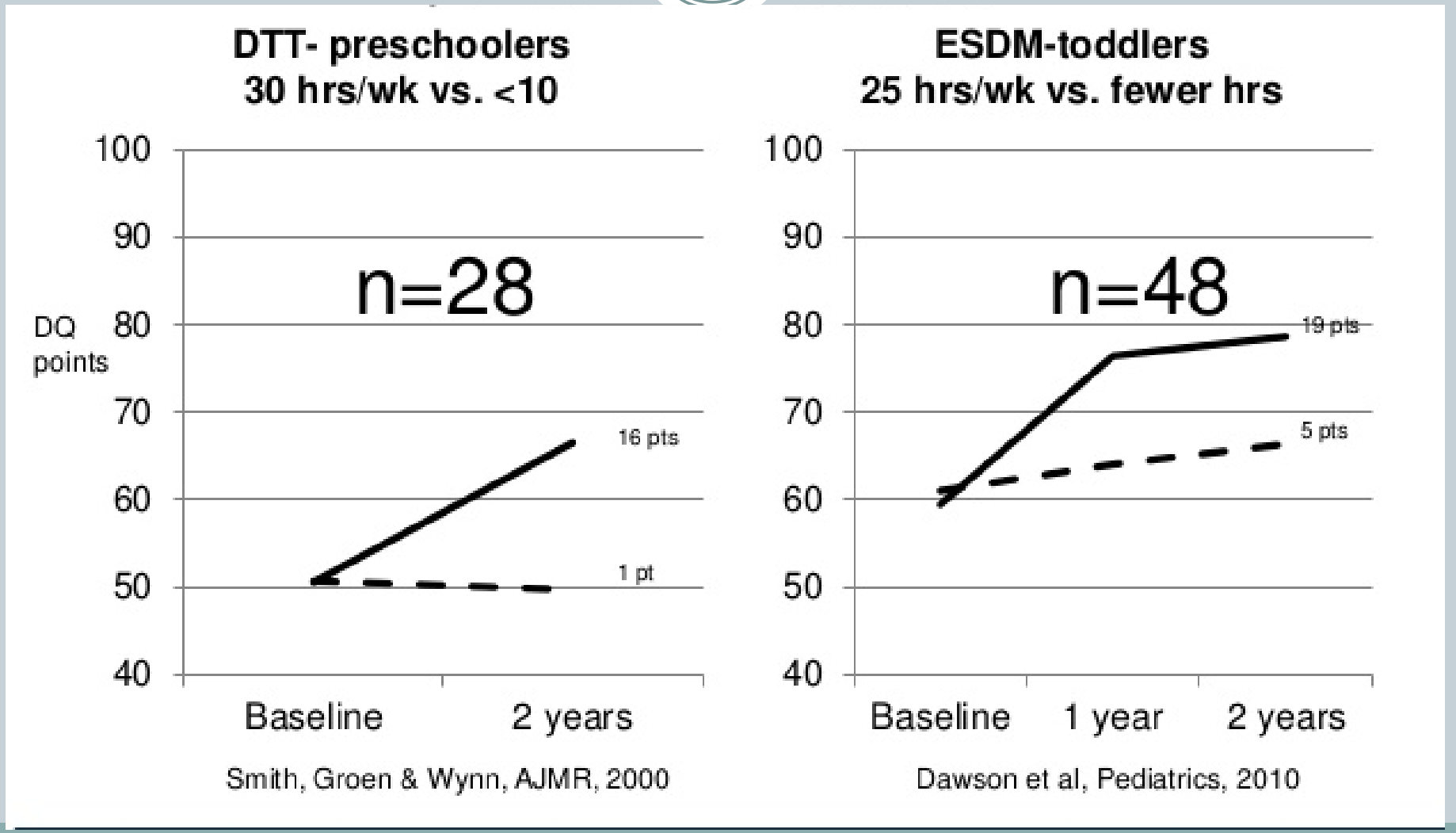
- Broadening the attentional focus of the child
  - Reduce stimulus over selectivity by using multiple exemplars, teaching in varied settings, and in the natural environment.


Zingo!
BINGO with a ZING

Examples of NDBIs

- Enhanced Milieu Teaching (EMT)
- Project ImPACT
- Early Start Denver Model (ESDM)
- Joint Attention Symbolic Play Engagement and Regulation (JASPER)
- Social Communication/Emotional Regulation/Transactional Support (CERTS)
- Early Achievements
- Reciprocal Imitation Training (RIT)

Support for NDBIs



Does This Work in Schools?

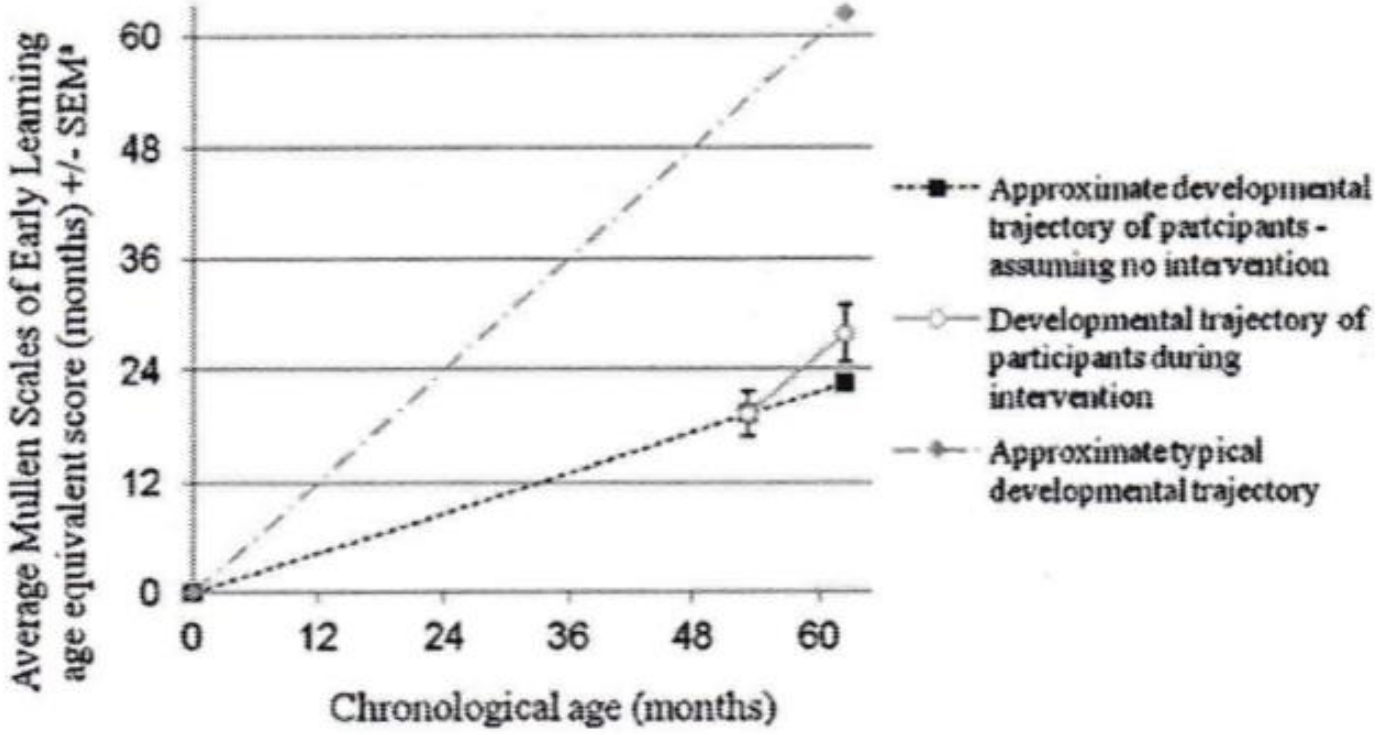
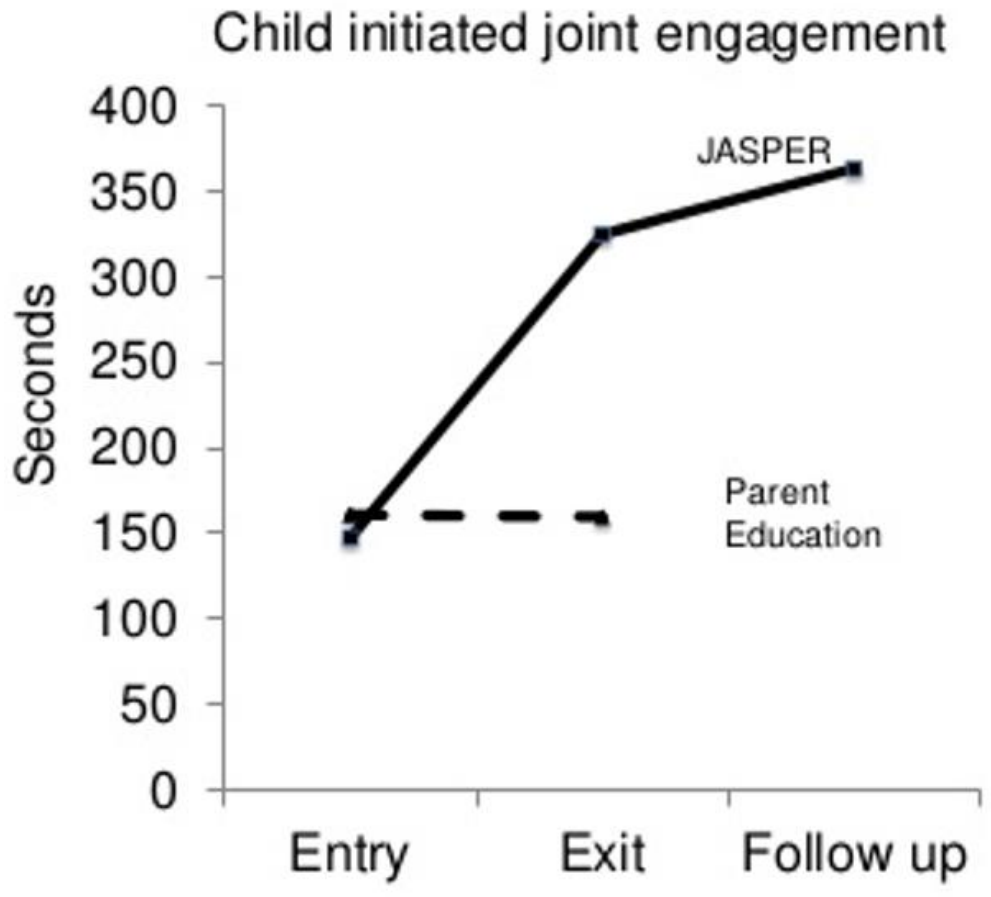


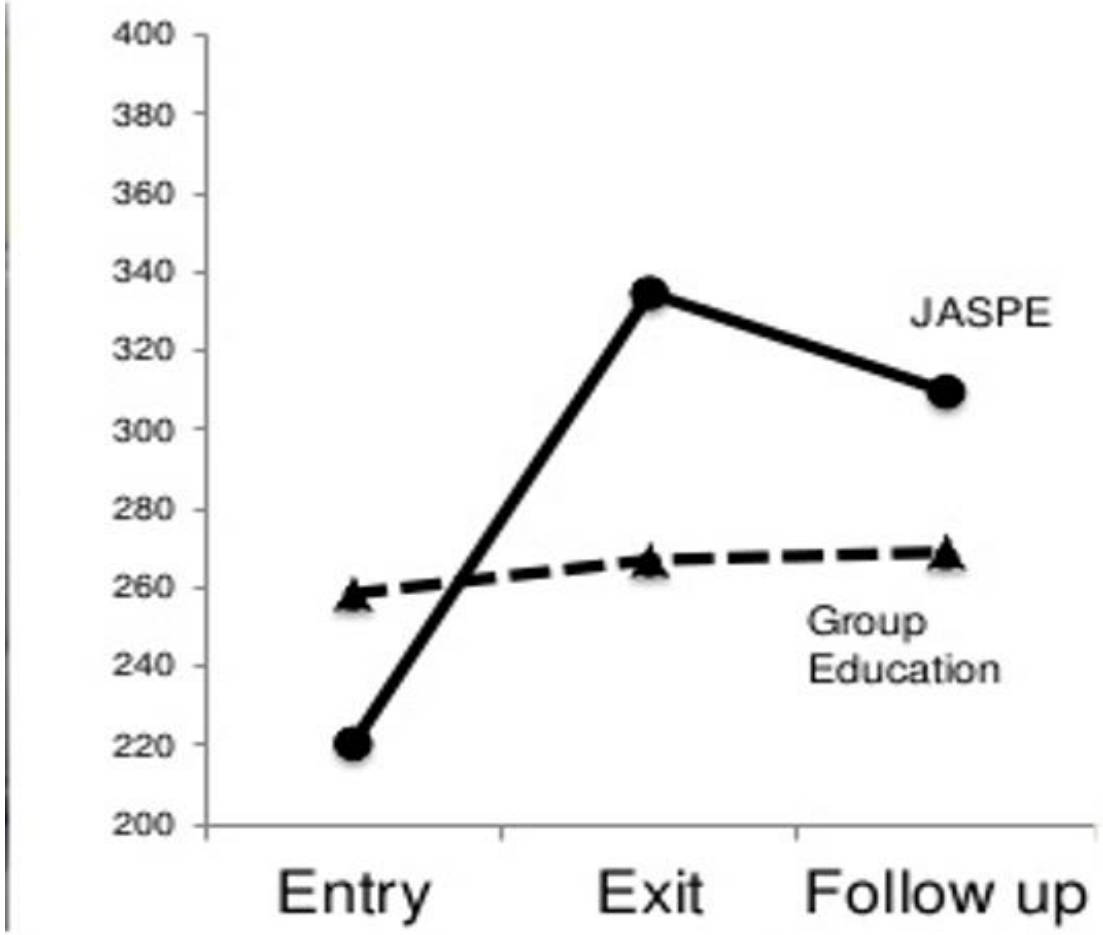
Figure 1 Approximate developmental trajectory of study participants before and during group ESDM intervention, compared to a typical developmental trajectory. a. MSEL scores were calculated by taking the average of the age equivalent scores obtained in the four completed MSEL subscales (i.e., Visual Reception, Fine Motor, Receptive Language and Expressive Language) in order to provide an estimate of overall intellectual ability.

Eapen, Cmcec, & Walter, 2013

And What About with Parents?



(Kasari, Gulsrud, Paparella, Hellemann, Berry, JCCP, 2015)



(Kasari, Lawton, Shih, Barker et al, Pediatrics, 2014

Beyond Labels and Into the Application

Key strategies to enhance interventions and teaching

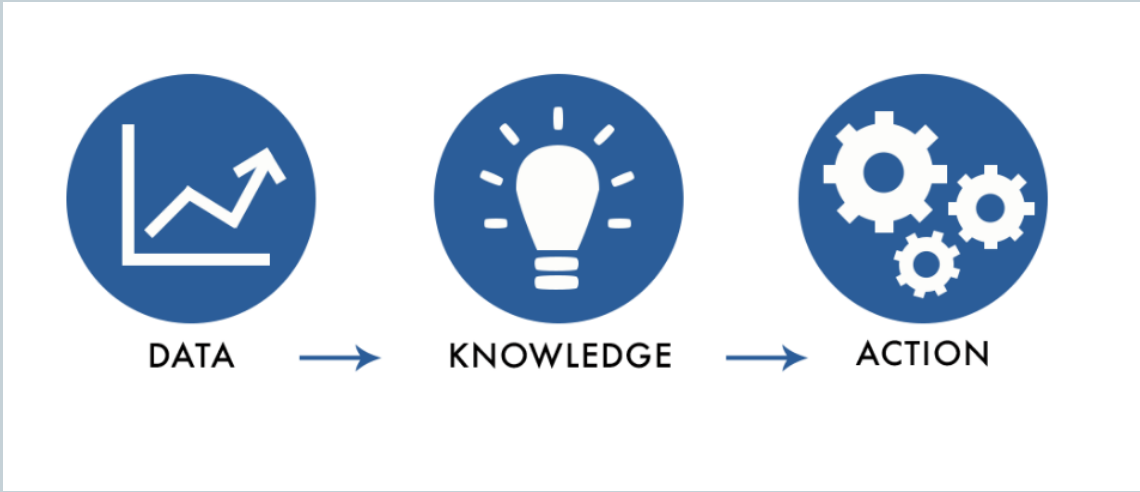
1. Assessment, data, and problem solving strategies
2. Goal setting
3. Effective scaffolding and teaching
4. Using and structuring the natural environment
5. Routines and themes
6. Maximizing motivation
7. Team approach with parent partners

1. Assessment, data, and problem solving

- Developmental Assessment
  - Essential for program development at all ages.
- Baseline data on proficiency of key target skills and behaviors
  - Skill and performance deficits
- Functional Behavior or Functional Analysis Assessment
  - As necessary for any skills that pose a threat to the child or those around him or her.
  - Also behaviors that significantly impact family quality of life.

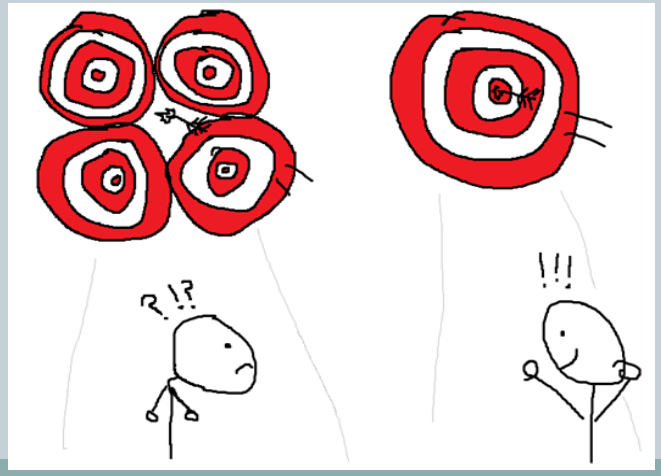
1. Assessment, data, and problem solving

- Data is essential!
  - Problem solving when insufficient progress.
  - Doesn't have to be continuous.
    - Probes, first trial data, language samples, etc…
  - Should be part of ongoing progress monitoring and assessment.



2. Goal Setting: Picking a Target

- Identifying Strengths and Deficits and How to Address Them
  - Multiple sources: parent concerns, developmental assessment, observations, input from other providers, etc…
- Addressing deficits or problem behaviors
  - Refer to developmental assessment and address areas with most deficits first
  - Ensure all precursor developmental skills have been mastered
  - Social validity
  - If problem behaviors do not pose a danger may not need to be specifically addressed for reduction but still need to track
  - Refer to baseline data!



2. Goal Setting: Writing Goals and Targets SMART Goals

- SMART goals
  - S - specific
  - M - measurable
  - A - action-oriented
  - R – realistic and relevant
  - T - time-limited

http://www.wrightslaw.com/bks/feta2/ch12.ieps.pdf

2. Goal Setting: Example

When desired activities or objects are present (i.e. in view but not accessible) or offered to her as a choice, Marie will request them from her partner by using directed vocalizations paired with eye contact and/or proximal point in 4/5 opportunities across 3 consecutive 15 minute time samples in the clinic and classroom with 3 or more people .

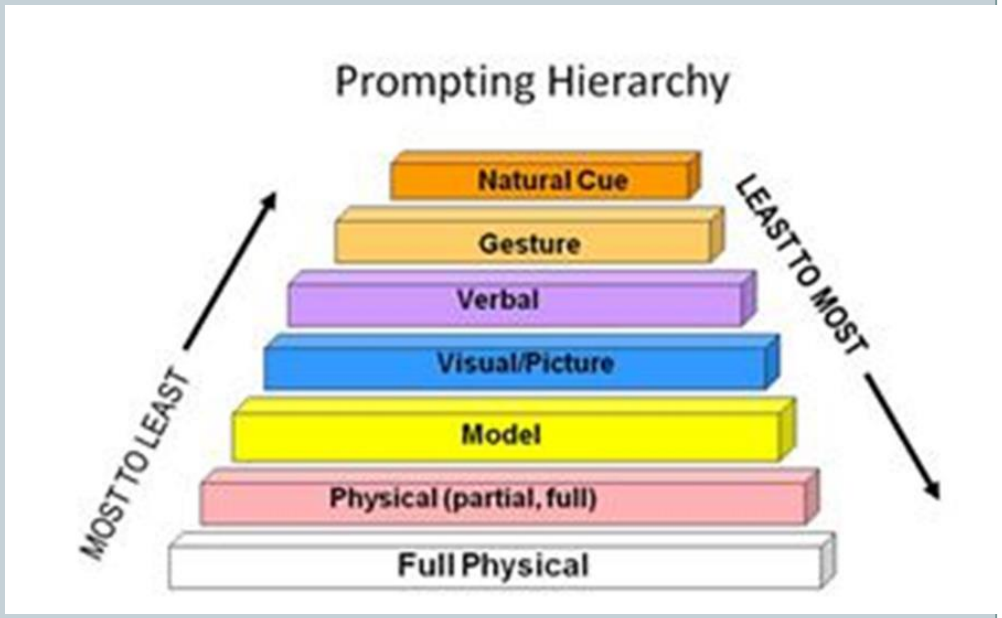
1. When an adult blocks access/withholds a desired item or it is out of reach, will combine vocalizations and gaze or gestures (pointing or reaching) to request the item in 4/5 opportunities.
2. Vocalize with intent (vocalization in conjunction with eye contact, reaching, and/or gesture) in 4/5 opportunities across 3 consecutive 15 minute time samples.
3. Request by using directed vocalizations paired with gesture (pointing or reach and pause) and/or eye contact in 4/5 opportunities across…
4. Request by using directed vocalizations paired with eye contact and/or proximal point in 4/5 opportunities across…
5. Request by using directed vocalizations paired with eye contact and/or proximal point in 4/5 opportunities across 3 consecutive 15 minute time samples in the clinic and classroom with 3 or more people.

3. Effective Scaffolding and Teaching: Scaffolding for success

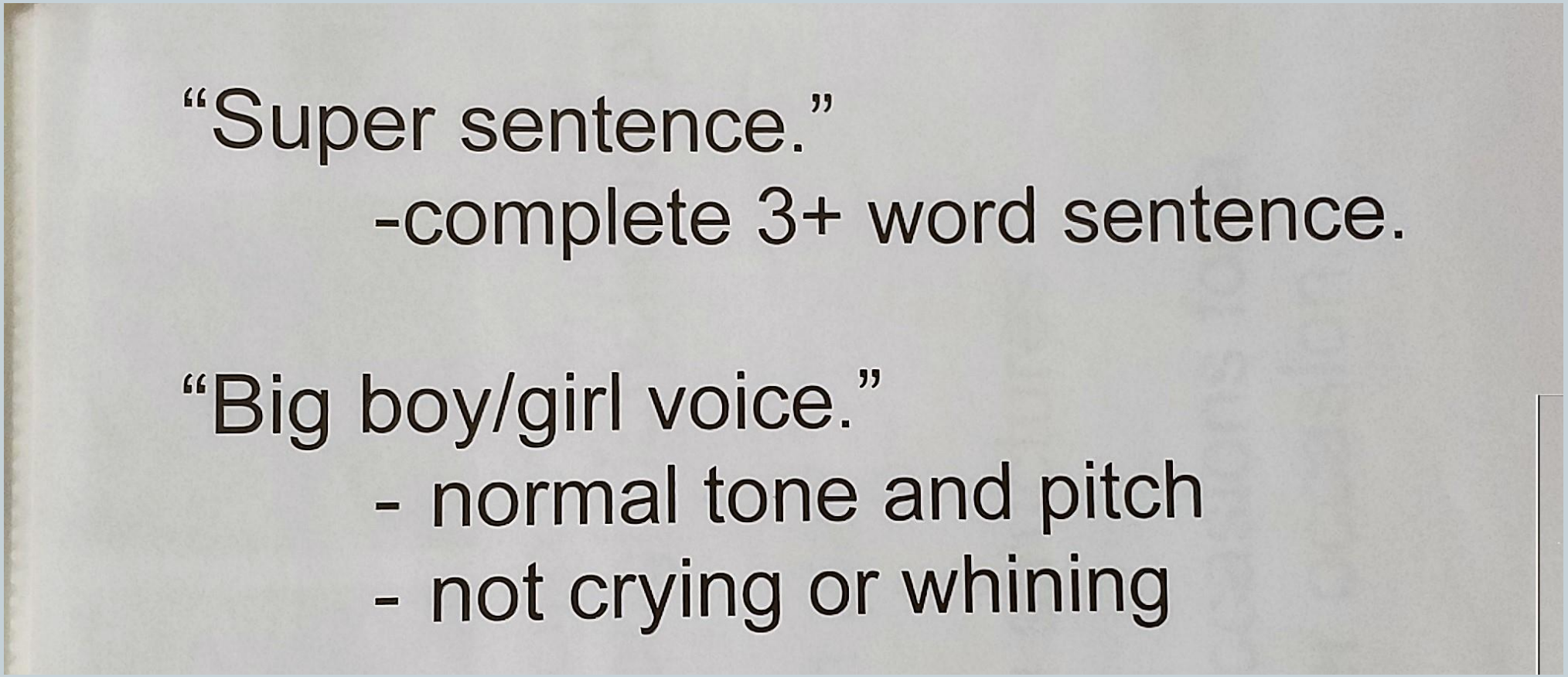
- Developmental inventories
  - Essential for program development at all ages.
- Baseline data on proficiency of key target skills behaviors
  - Skill and performance deficits
- Functional Behavior or Functional Analysis Assessment
  - As necessary for any behaviors that pose a threat to the child or those around him or her.
  - Also behaviors that significantly impact family quality of life.

3. Effective Scaffolding and Teaching: What is a prompt?

- Prompting doesn't cause dependence – bad prompting causes dependence.
- Consult the literature!!
- Most to least prompting – Least to most
- Physical activity = physical prompt
- Get creative!
  - "Super sentence," or "Big girl voice."
  - "We have cookies for snack," signal peer or sibling to model requesting a cookie.



3. Effective Scaffolding and Teaching



3. Effective Scaffolding and Teaching: Beware of Verbal Prompts!!!

3. Effective Scaffolding and Teaching: Modeling language

- Modeling language
  - Model language throughout
  - Model multiple communicative functions
    - Comments, requests, questions…
  - Model at or just above child's language level (mean length of utterance)
  - Model throughout but can be more targeted using your ABCs

4. Using and Structuring the Natural Environment

Physical Structure

- Structure is a prompt be aware of fading to become more natural.
- Structure is dependent upon needs and space.
- Choose activities wisely and only include those that are motivating and help teach targets skills.
- Less is more!

Schedule and pacing

- Pacing and activity choice is important!

4. Using and Structuring the Natural Environment

Room 1 Class Schedule

8:30-9:00 Breakfast (Bathroom)

9:00-9:25 Circle

9:25-10:45 Rotations

-Art & Fine Motor, DTT, Independent and Computer, Academic and Social Skills

10:45-11:10 Story (Bathroom)

11:10-11:40 Lunch

11:40-12:15 Yard

12:20-12:40 Quiet Time

12:40-1:40 Guided Play

- DTT, Sensory Walks, Bathroom

1:40-2:00 Snack

2:00-2:20 Music (Bathroom)

2:20-2:30 Goodbye Circle

5. Routines and Themes and Project Based Learning

- Embedding learning in daily routines
  - Increases meaning, engagement, motivation, and reinforcement
  - Easier for parents to provide more learning opportunities
  - Promotes generalization and maintenance of new skills
- Targets can come from these routines or from functional themes
  - Seasons, holidays, family events, trips, child's interest, etc…
  - Themes create a cohesion that help children learn, gives learning structure, and create meaningful connections

5. Routines and Themes and Project Based Learning

- "The curriculum should the vehicle for the intervention!"
- Thematic and project based learning
  - Children learn by doing and by making emotional connections to the content
  - Repetition promotes learning
  - Repetition in different contexts and different materials promotes generalization
  - Could thematic and project based learning increase rate of acquisition and improve generalization?


ATTENTION PRINCIPAL
English/Language Arts
THIS SIDE UP

6. Maximizing Motivation

- Using developmentally appropriate natural reinforcement is fun!
- Build reinforcement into the schedule by alternating highly preferred and moderately preferred activities
- Give choices, even forced choice is better than no choice.
- Make it fun!
- Make it predictable!
- Make it meaningful!

7. Team approach with Parent Partners

- Once you have gotten through everything else this will be so much easier!!!
- Start with one positive routine where the child and parent are motivated to interact with each other
- Be honest with parents
  - Good early intervention is messy!
  - Sometimes the experts are wrong, we need to problem solve together
- If its meaningful to you and is developmentally appropriate then it's a PRIORITY for intervention.

Is this NDBI thing a new concept or just a new name?

- Not new to Early Childhood Special Education and Early Intervention professionals
- Not really new to best practices in clinical ABA
- Its not always the first who gets the prize but those who write out an explanation, name it, and get it published.
- In the end we all benefit!


10 WEEKS LATER

Want to Know More?

- For slides and more information please visit
  - Smallstepsinterventions.com
- Books
  - Ingersoll & Dvortcsak, 2010. Teaching Social Communication to Children with Autism: A manual for parents.
  - Ingersoll & Dvortcsak, 2010. Teaching Social Communication to Children with Autism: A practitioners guide to parent training.
  - Linder, T. W., (1993). Transdisciplinary Play-Based Assessment: A Functional Approach to Working with Young Children.
  - Koegel & Koegel, 2006. Pivotal Response Treatments for Autism: Communication, social & academic development.
  - Johnson-Martin, N. M., 2004. The Carolina Curriculum for Infants and Toddlers with Special Needs.
  - McCarthy & Sherman, 2011. ABA-Based Early Intensive Intervention Embedded within Family Routines and Play.
  - Rogers & Dawson, 2009. Early Start Denver Model for Young Children with Autism: Promoting language, learning,, and engagement.
  - Rogers, Dawson, & Vismara, 2012. An Early Start for Your Child with Autism.

Some Acronyms

- ABA – Applied Behavior Analysis
- RDI – Relationship Development Intervention
- PECS- Picture Exchange Communication System
- FCT – Functional Communication Training
- PRT – Pivotal Response Treatment
- NET – Natural Environment Teaching
- DTT – Discrete Trail Teaching
- Project ImPACT – Improving Parents as Communication Teachers
- JASPER – Joint Attention Symbolic Play Engagement and Regulation
- CERTS – Social Communication/Emotional Regulation/ Transactional Support
- TEACCH – Treatment and Education of Autistic and Related Communication Handicapped Children