



Autism - Early Detection and Intervention:

What Every Teacher Needs to Know

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www.gesellinstitute.org





Gesell Institute of Human Development

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Dr. Arnold Gesell

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History of Arnold Gesell and the Gesell Institute of Human Development

- Arnold Gesell was born in 1880, died 1961
- 1911 Arnold Gesell, PhD, came to Yale, founded Yale Child Study Center
- In 1915 earned a Medical degree from Yale
- Used technology—cinematography—to systematically document and study child development as no other had done before him

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- Retired from Yale in 1950 and established the non-profit Gesell Institute for Child Development
- Died in 1961 and Dr. Louise Bates Ames and Dr. Frances Ilg continued and expanded upon Gesell's work
- During 1970's and 1980's the Institute prospered as a clinic that treated children, conducted research, and operated a child care center

Today, Gesell Institute educates, guides and supports parents and teachers to understand "ages and stages" of typical child development, and is the "home" of the Gesell Developmental Observation assessment.

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Typical vs. Atypical Development

- Arnold Gesell studied and scientifically documented sequential stages of typically developing children.
- ALL children develop through these same stages, but not all at the same pace.
- Children who have a diagnosis on the Autism Spectrum experience significant challenges which require support in order to reach their full potential as unique individuals in their peer community.

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What if I think there is a problem?

common challenges

data-driven, collaborative experience

- Problem suspected with “gut” feeling
- Qualitative
- Subjective
- “Best left to the experts”

- Problem measured using simple data collection
- Quantitative + Qualitative
- Objective
- Parent + Teacher + Child + Experts together
- Understand problem in multiple contexts

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"What can I do?"
Teacher's role in the process

Respective Roles in Process

1: Baseline observation → **2: Diagnosis** → **3: Intervention**

Level of Involvement

Teacher + Parent

Practitioners

Type of Teacher Involvement over Time

– Initial observations
– Engage Parents
–Measure and report

– Support Parents
– Provide input to Comprehensive Child Assessment
– Classify for Spec. Ed. Services
– Reflect on Diagnosis / Interventions

– Implement Intervention Plan
–Observe & Measure
–Graph results / report back
–Compare to initial observations
–Modify intervention if needed

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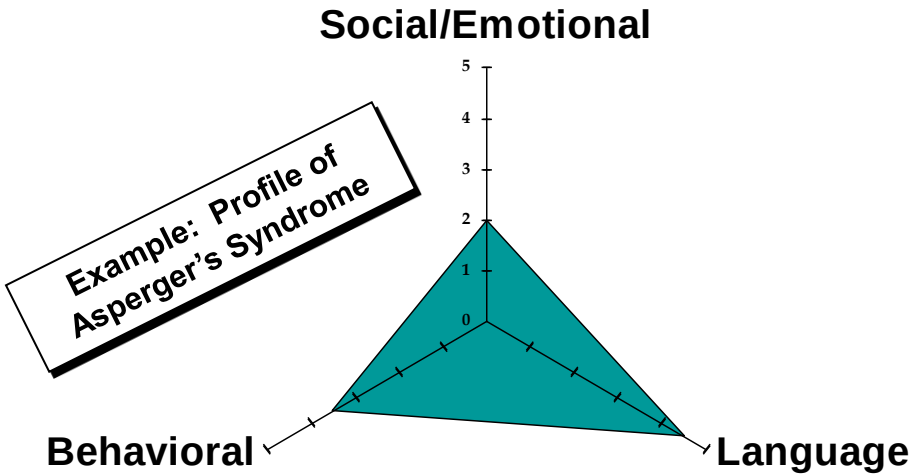
1 → 2 → 3

Key areas of impairment for children on the Autism Spectrum

Areas of Impairment Framework



Definitions

- Language: Problems communicating with others (using and understanding language)
- Behavioral: Difficulty with changes in routine or familiar surroundings. Repetitive body movements or behavior patterns.
- Social / Emotional: Difficulty relating to people, objects and events. Unusual play with toys and other objects.

Autism Spectrum

Note: This is a pictorial representation of relative functioning from low to high. Practitioners use the DSM-IV to diagnose pervasive developmental disorders. ASD is a neurological disorder with symptoms ranging from mild to severe. Thus, each child's profile on the AS is unique.





General Framework for Making Classroom Observations

	Social / Emotional	Language	Behavior
Playground	Turn taking?	Tries to get attention of peers? Hide and seek?	Sensitive to loud noises? Spins in circles?
Snack Time	Responds to name? Shows facial expression?	Engages in appropriate conversation?	Able to sit at table? Has nonfunctional routines?
Dress – Up	Imitates play of others? Symbolic use of toys?	Expresses desire to take part or play role of character?	Sustains interest in play?
Water Table/ Sandbox	Enjoys shared activity?	Uses language to make needs known?	Unusual Sensory Response?
Blocks	Watches what peers are building?	Requests for help to build? (verbal or nonverbal)	Repetitive use of materials?
Arts & Crafts	Shows creation to teacher or others?	Repeats instructions over and over to self?	Unusual sensory responses to materials?

As appropriate to developmental age and peer group

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Selecting Target Behaviors to Measure

- Target behaviors should be observable, specific and measurable
- Behaviors should be relevant to child's overall functioning in the classroom
- "Dead man's test"
- "Baseline" functioning is extremely useful to provide reference point
- Multiple observations in various settings will enhance confidence

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Methods for collecting data on target behaviors

- Frequency
- Time sampling
- Duration
- Latency

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Methods for collecting data on target behaviors:

Frequency

How often does a behavior occur during a set observation period?

Sum tally marks

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Methods for collecting data on target behaviors:

Time Sampling

Presence (+) or absence (-) of a behavior during a specific interval

– partial interval → Record (+) if behavior **occurs at all**, record (-) if it does not

– whole interval → Record (+) if behavior **occurs for the whole interval**, record (-) if it does not

– momentary → Record (+) if behavior **occurs at the end of the specified interval**, (-) if it does not





Methods for collecting data on target behaviors:

Duration

Duration refers to the length of time a behavior occurs.

Requires an exact definition of an instance of the behavior and a stopwatch.

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Methods for collecting data on target behaviors:

Latency

Latency refers to the length of time that passes between when an instruction is given and a target behavior occurs.

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Collecting Data and Graphing Results

Figure 1} Frequency Recording Data Sheet

Student: Jose **Date:** 10/2

Record a tally mark (/) for each occurrence of the target behaviors during the specified time period. Record a 0 if no target behavior occurred during the specified time period.

- **Aggression** is defined as any occurrence of kicking, hitting, pinching, or throwing objects at another person. Attempts to kick, hit, pinch, or throw an item are also recorded.
- **Talking Out** is defined as any occurrence of Jose speaking without permission during group activities in the classroom.

	Aggression	Talking Out	Staff Initials
9-9:15 a.m.	////	//	SF
9:15-9:30 a.m.	0	0	SV
9:30-9:45 a.m.	///	0	LB
9:45-10:00 a.m.	0	////	LB
10:00-10:15 a.m.	0	///	SF
10:15-10:30 a.m.	0	/	SF
Total	**7**	**10**	

Source: Evidence Based Practice and Autism in the Schools. National Autism Center.

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Collecting Data and Graphing Results

Figure 2} Interval Recording Data Sheet

Student: Stacey **Date:** 4/9

Self-stimulatory Behavior is defined as any occurrence of Stacey rocking her upper body in a back and forth motion while seated in her chair.

Record self-stimulatory behavior during three 5-minute observations each school day.

The 5-minute period is divided into 10-second intervals. Self-stimulatory behavior is recorded during a partial interval. Record a "+" if the behavior occurs during the interval and record a "-" if the behavior does not occur during the interval.

Time Start: 9:40 a.m. **Time End:** 9:45 a.m.						**Time Start:** _____ **Time End:** _____						**Time Start:** _____ **Time End:** _____					
1-1 +	1-2 +	1-3 +	1-4 –	1-5 –	1-6 +	1-1	1-2	1-3	1-4	1-5	1-6	1-1	1-2	1-3	1-4	1-5	1-6
2-1 +	2-2 –	2-3 +	2-4 –	2-5 +	2-6 +	2-1	2-2	2-3	2-4	2-5	2-6	2-1	2-2	2-3	2-4	2-5	2-6
3-1 –	3-2 –	3-3 –	3-4 +	3-5 +	3-6 +	3-1	3-2	3-3	3-4	3-5	3-6	31	3-2	3-3	3-4	3-5	3-6
4-1 +	4-2 +	4-3 –	4-4 –	4-5 –	4-6 –	4-1	4-2	4-3	4-4	4-5	4-6	41	4-2	4-3	4-4	4-5	4-6
5-1 –	5-2 –	5-3 –	5-4 –	5-5 –	5-6 –	5-1	5-2	5-3	5-4	5-5	5-6	51	5-2	5-3	5-4	5-5	5-6
Number of intervals with + 13 Number of intervals with – 17 % of intervals target behavior occurred: 43						Number of intervals with + _____ Number of intervals with – _____ % of intervals target behavior occurred: _____						Number of intervals with + _____ Number of intervals with – _____ % of intervals target behavior occurred: _____					

Source: Evidence Based Practice and Autism in the Schools. National Autism Center.

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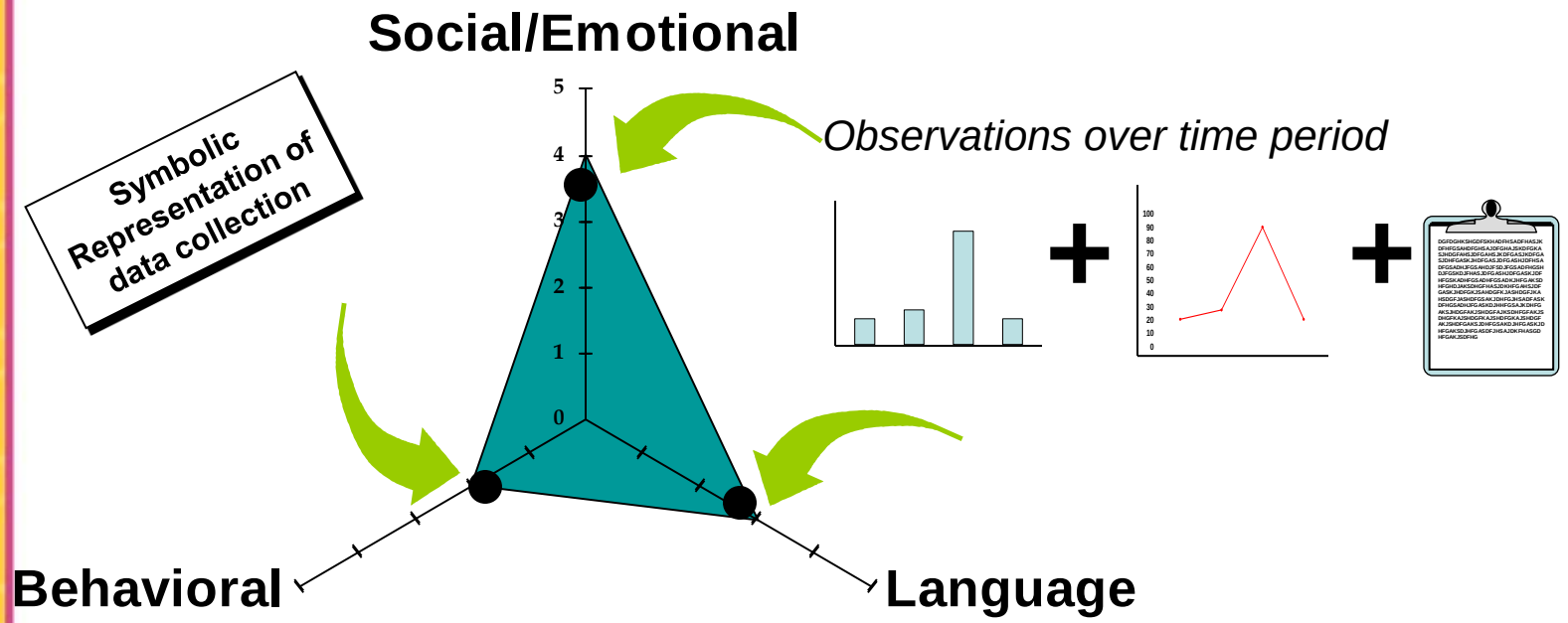
Unique profile for each child is based on measurable observations

Areas of Impairment



Note: Above data "Points" represent a combined set of observations across each of the three areas. The unique "fingerprint" will provide an initial indication of impairment relative to child's neurotypical peers and relative to each of the 2 other areas of impairment.

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Parent Partnership

- Use your observational recordings to compare child's behavior to typical "ages and stages" of child development.
- Communicate with parents by sharing your observational data about their child.
- If parent shares your concerns about their child, they may wish to conduct similar observations of the child at home.
- Advocate for a comprehensive developmental assessment of their child by a team of professionals.

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Comprehensive Developmental Assessment

Who?

- Child psychiatrist, developmental pediatrician, child psychologist, neurophysiologist, neurologist

What?

- Diagnosis is made based on DSM-IV (1994) criteria of defining pervasive developmental disorders

How?

- Detailed family interview to obtain medical, social and developmental history
- Autism specific measures to assess communication and social skills
- Standardized measures of cognitive ability, developmental level, motor skills, communication skills, adaptive skills and social interactive abilities

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Reflect on diagnosis/ IEP in a classroom setting

- Compare observational “baseline” data to the child’s assessment report as a “reality check”
- Reflect on the unique profile of child’s strengths and weaknesses revealed by the assessment
- Reflect on the intervention plan

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2009 National Standards Project: Evidence-Based Interventions

- Antecedent (99): modifying the situational events that often precede occurrence of target behavior.

  Example: environmental enrichment, stimulus variation, time delay.

- Behavioral (231)*:* teach functional alternative behaviors by changing consequences

  Example: reinforcement strategies, token economy

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2009 National Standards Project: Evidence-Based Interventions

- Comprehensive Behavioral Treatment for Young Children (22): combination of applied behavior analytic procedures, intense, often 1:1.

  Example: Lovaas (1987) multi faceted behavior analytic approaches are specific to child's needs across contexts. Min 25 hrs per week, for 2-3 years.

- Joint Attention (6): building foundational skills to regulate behavior of others

  Example: pointing, showing, following eye gaze

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2009 National Standards Project: Evidence-Based Interventions

- Modeling (50): Use live or video modeling of target behavior in presence of child with ASD

- Naturalistic Teaching Strategies (32): Use of direct and natural consequences of behavior to structure a rich schedule of reinforcement that is relevant to life contexts.

- Peer Training (33): Select and teach peers to model appropriate play skills, be a “good buddy”, provide help and affection.

Example: Integrated Play Groups

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2009 National Standards Project: Evidence-Based Interventions

- Pivotal Response (14): Target self management areas that may have a broad effect on other skills

  Example: engagement in social communication, self initiation, self management

- Schedules (12): Use of schedules to plan activities on a daily, weekly or monthly basis.

  Example: written words, pictures or photographs or work stations

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2009 National Standards Project: Evidence-Based Interventions

- Self Management (21): Promote independence by teaching self recording of target behaviors and securing reinforcement for doing so

  Example: Checklists, wrist counters, tokens

- Story-based Intervention (21): Written description of the situations under which specific behaviors are expected to occur

  Example: Social Stories™ that answer "who," "what," "why," "when"… to improve perspective taking

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10 Questions to Ask When Evaluating the Appropriateness of an Intervention

1. How does this intervention fit with the **current approach** being used to educate the child?

2. Is there any empirical **research** on the effectiveness of the intervention?

3. How does this intervention fit with the profile of the child's **strengths**, needs and learning style? Cultural **values** of the child's family?

4. Is this intervention consistent with what we know about **child development**, the development of children with ASD and effective treatments?





10 Questions to Ask When Evaluating Appropriateness of Interventions

5. How does this intervention fit with the family's **long-term goals** for the child?

6. How will you **measure if the intervention is successful?** What type of data can be collected and how will the data be used to make decisions regarding the effectiveness of the intervention?

7. **What may the child be losing** in terms of current programming in order to find time to implement this intervention?

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10 Questions to Ask When Evaluating Appropriateness of Interventions

8. What, if any, are the **negative effects** of trying the intervention?

9. Do staff members have **training and experience** working with children with autism?

10. What may be the emotional, financial or time **costs of the intervention** for the child, family, and educational community?

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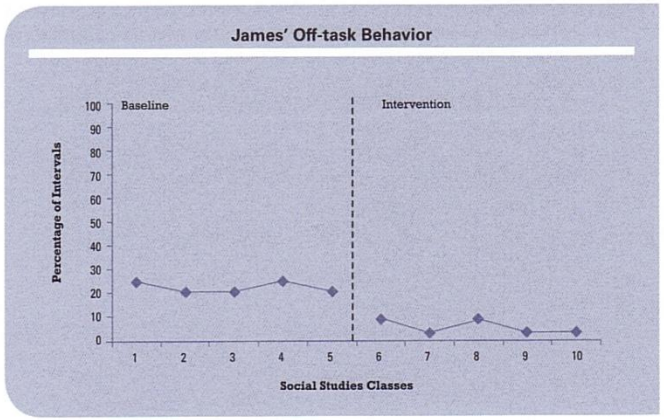
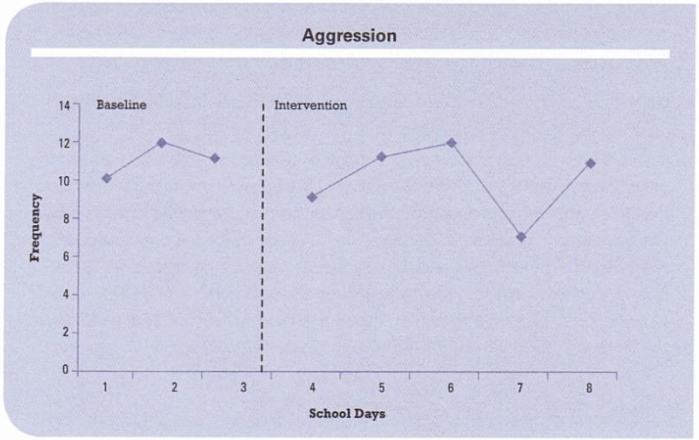
Collecting Data and Graphing Results

Figure 5} Graphical Representation of James' Off-task Behavior



Examples

Figure 8} Example of Ineffective Intervention: High Percentage of Overlapping Data Points Between Baseline and Intervention



Source: Evidence Based Practice and Autism in the Schools. National Autism Center.

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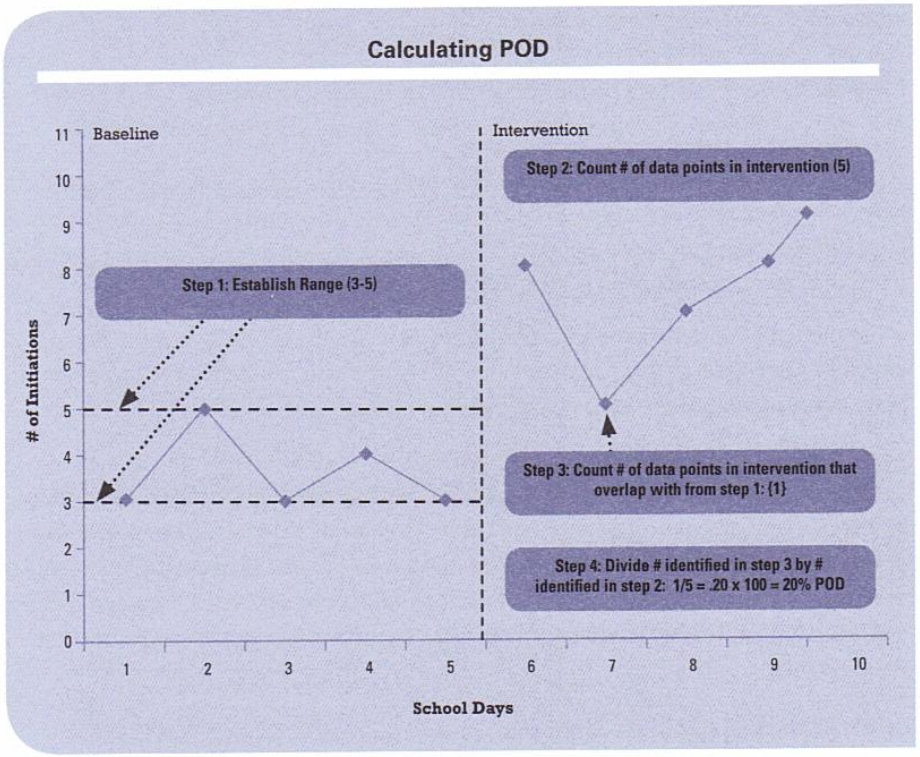
How effective was the intervention?

Figure 7} Graphical Representation of Calculating Percentage of Overlapping Data Points



Source: Evidence Based Practice and Autism in the Schools. National Autism Center.

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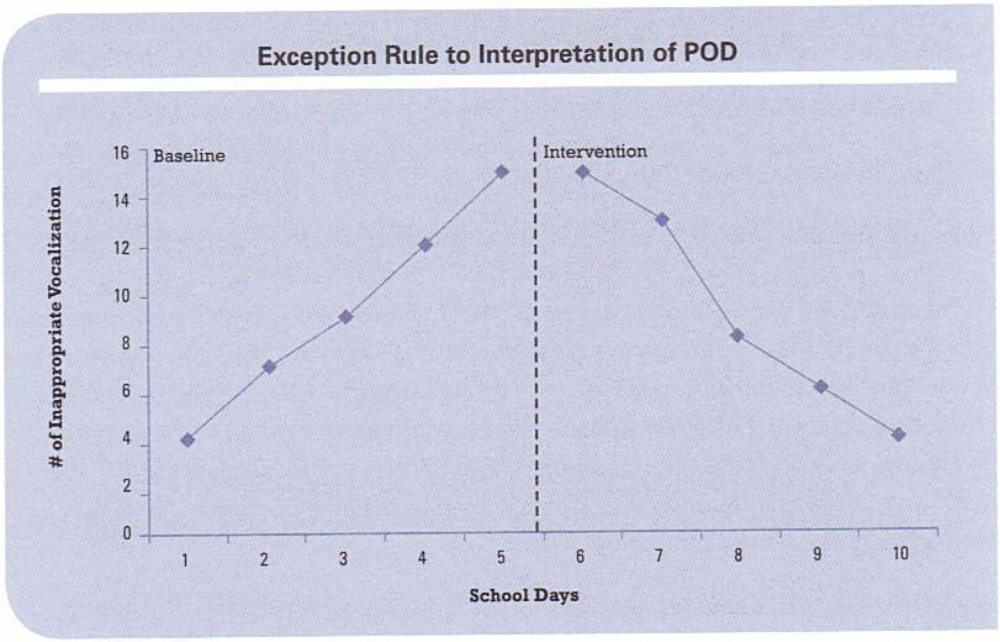
Take a Good Look!

Figure 9} Example of Exception to the POD Rules



Points of Data may overlap, but direction of change (slope) shows improvement!

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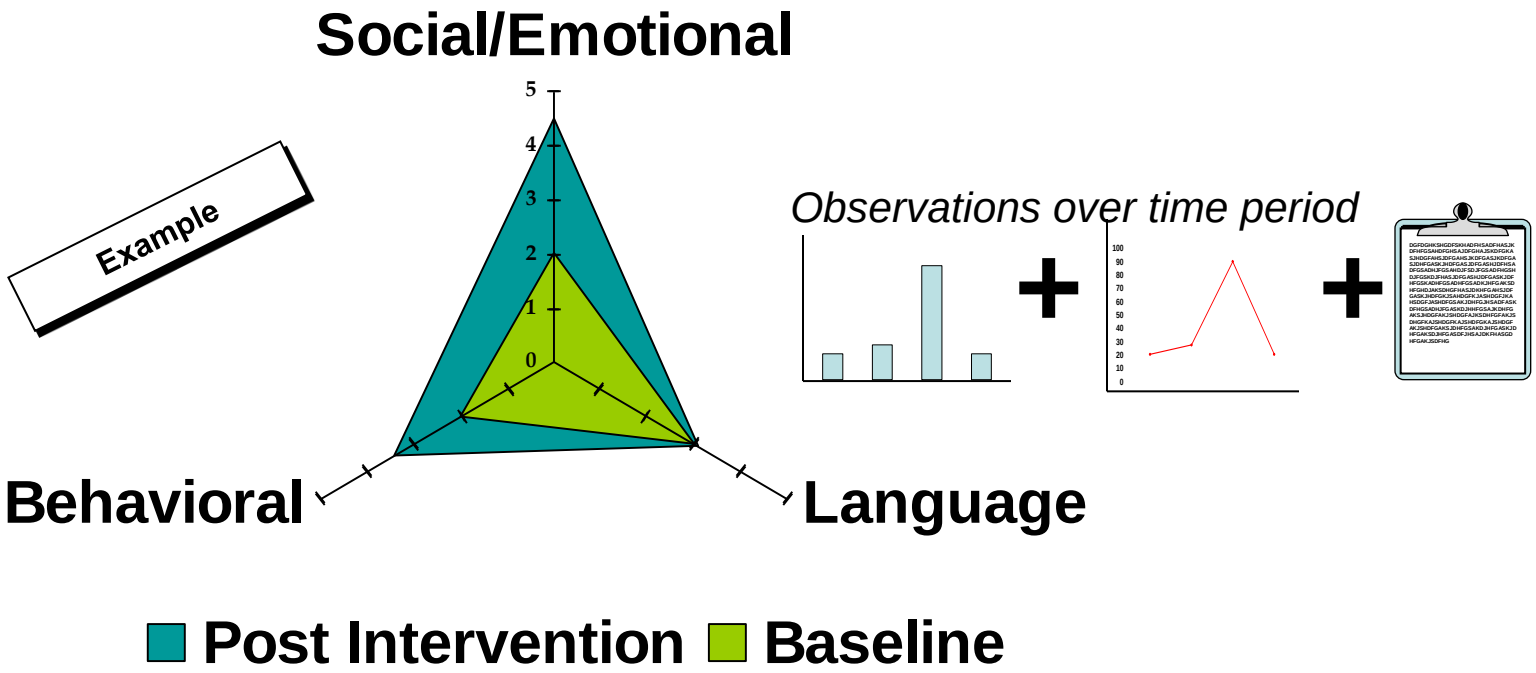
Measure effectiveness of intervention



Teach – Assess - Revise

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Conclusions

- Don’t be afraid to test your instincts by collecting data on what you see in the classroom.
- Graphs can be powerful communication tools with everyone involved in a child’s progress.
- Promoting home + school connection and family engagement in the process will enhance a child’s chance for future success.
- Using one or more Evidence-Based interventions is the best place to begin.
- Comparing a child’s “baseline” behavior to behavior after an intervention is crucial to managing interventions and optimizing child outcomes. It can also surprise you!

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Resources

Autism Society of CT. www.autismsocietyofct.org.

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