

**Collecting Meaningful Data
to Evaluate the
Effectiveness of AT**



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Goals for the Session

- Clarify components of evaluation of effectiveness of AT use.
- Develop a plan to evaluate the effectiveness of AT for one student.
- Reflect on evaluation of effectiveness practices in your setting.

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Need to Evaluate

- Is what we are using working as intended?
- What effect is it having?
- Is that effect sufficient?
- What, if anything, needs to be changed?



ACTIVITY
Think of a child for whom you need to answer one of the questions from the previous slide.
What is it you want the student to do?
What do you want to change?
How will you change it? (What AT will you provide?)
Who will collect data? What kind will it be?
When will they collect the data? For how long?
What is the criteria for success?

• **What aspects of the student's performance will change?**

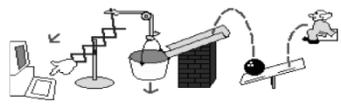


- ✓Speed/
Frequency
- ✓Accuracy
- ✓Independence
- ✓Spontaneity
- ✓Duration
- ✓Latency
- ✓Quality
- ✓Quantity

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How will the way the student completes the task(s) change?

- ✓New AT?
- ✓New educational strategies?
- ✓Accommodations?
- ✓Modifications?



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What amount of change is realistic during this time period?



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Evaluating Writing Interventions

Evaluation of effectiveness is a dynamic, responsive, ongoing process that is reviewed periodically.

- Planning begins before intervention
- Baseline data critical
- Frequency of data collection
- Frequency of review

Developmental Writing Scale for Beginning Writers

1. Drawing	9. One to two sentences
2. Scribbling	10. 3+ sentences (not coherent)
3. Letter strings (no groups)	11. 3+ sentences (coherent but limited cohesion)
4. Letters grouped in words	12. Organized + Cohesive & Coherent
5. One real word	13. Organized + 2 cohesive subsections
6. Two to three words	14. Organized +3 cohesive subsections
7. More than 3 words in list	
8. Partial sentence	

Also:

- Number of words
- Number of Unique Words
- Topic Diversity
- Genre Diversity



Sturm, Nelson, Statoskowski, & Cali, (2010)

Capitalization—6+1 Writing Traits Rubric

1. Has capitalization that is random, inconsistent, and sometimes nonexistent
2. Applies only the most basic capitalization rules correctly
3. Has capitalization that shows frequent errors except for proper nouns and sentence beginnings
4. Uses correct capitalization in most cases
5. Includes correct capitalization consistently
6. Includes correct capitalization consistently and may employ more sophisticated capitalization for effect

-Education Northwest, Traits Rubric Grades 3-12

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What is the best way to gather evidence of change?

- ✓ Interviewing the student
- ✓ Reviewing finished products created by the student
- ✓ Observing the Student's Performance
- ✓ Video recording

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Interviewing the Student

Most useful when you want to understand the experience of the student and the meaning the student makes from those experiences



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AT Student Interview

- What classes are the hardest or what tasks within classes are the hardest?
- What is the hardest part of taking a test?
- What do you do about these problems?
- Have you seen things that might help you?
- What do you want to ask other team members?
- What do you want to tell other team members?

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Deciding what to ask the Student

- Preferences?
- Interests?
- Problems?
- Concerns?



Reviewing Products Created by the Student



- **Advantage is permanence and durability of data source**
- **Most commonly used type of data gathering**
- **May not tell us critical details**
- **Too often, it is the only type of data gathered**

Deciding What to Review

- **Written Products:**
 - Genre, topic, sense making
 - Macrostructure and coherence
 - Intra and Inter-sentence cohesion
 - Sentence structure and grammatical agreement
 - Vocabulary choices (maturity, diversity)
 - Word structure, spelling, letter formation, writing conventions

Gathering the Sample

- Existing artifacts?
- Original story (with or without story starter)?
- Making edits?
- Allow dictation, edits, assistive technology?



Looking at Student Work Record

Concrete Evidence <i>What do you see?</i>	Interpretation of Evidence <i>What might it mean?</i>		Accessibility Suggestions <i>What might you do?</i>
	Strengths	Difficulties	Diagnostic Questions and Strategies
Starting Words for the Columns <i>Did... Gave... Used...</i> <i>Wrote... Showed... Made...</i> (No judgments in this column)	<i>Knows how to...</i> <i>Is able to...</i> <i>Understands...</i>	<i>Doesn't know...</i> <i>Has difficulty with...</i> <i>Seems confused about...</i>	<i>Ask... Try... Plan... Present...</i> <i>Scaffold... Change... Create...</i> <i>Group... Observe... Prepare...</i>
Student _____			

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Observing the Student



- Tells how work was completed
- Two main ways:
 - Anecdotal data
 - Event data

Anecdotal Data



- Describing the setting
- Include everything the student says or does
- Include what others say and do
- If impressions are included, differentiate between fact and opinion
- Indicate time involved

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Deciding What to Observe

Writing processes

- Planning, organizing, drafting, rereading, revising, editing
- Self-regulatory functions (distractedness, time on task, need for prompts, etc.)



Event Data

- Discrete, observable event must occur
- May be easily done while teaching
- Most useful for very specific steps
- Can be very accurate



Types of data collection

- **Event recording**-how many times it happens
- **Latency recording**-how long it takes to get started
- **Duration recording**-how long it lasts
- **Time sampling**-behavior is ongoing, may check every three minutes, etc.

• Babkic (2013).

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CREATING A DATA-BASED DECISION MAKING SYSTEM

- Data should be readily available.
- Procedures for collecting data must be easy to use and not require excessive staff time and resources
- Data collection systems should not consume more than one percent of someone's time each day.
- Purposes for collecting data must be relevant to ongoing activities.
- Only a small number of questions should be addressed.

-George Sugai

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Using Video

- **More objective than people's observations**
- **May be distracting**
- **Useful for documenting change over time**



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Data Collection Strategies

Type of Information Gathering	When to Choose It	Potential Data
Interview	When student is able to provide needed information; And/or it is not observable	Student's preferences, feelings, intentions, concerns, device features that are important to the student
Review a Product Created by Student	When amount of time and number of opportunities to respond are constant (or not important)	Number of correct responses (e.g., on math assignment, spelling test, etc.)
	When time is constant (or not important) and opportunities vary	Percentage of correct responses
	When both amount of time and opportunities vary from day to day	Rate of correct responses

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Data Collection Strategies (con't.)

Observation - Anecdotal	When an event occurs only infrequently or "specific" actions to note have not been identified	General setting and information, related factors, context of occurrence
Observation - Event Recording	When specific observable behavior or action is occurring	Number of occurrences of specific action (e.g. looked at preferred choice, initiated communication, etc.)
	When time is constant (or not important) and opportunities vary	Percentage of occurrences of specific action
	When time varies or time and opportunities vary	Rate at which specific action occurs
Video or Audio Recording	When very detailed behavior needs to be analyzed or compared over time or analyzed in several ways or there is disagreement about what is occurring	Number of occurrences, rate of occurrences, type of change, subtle changes, etc.

Deciding What Data is Needed

- Can student communicate the information?
- Is there a finished product to review?
- Does the product provide needed info?
- Is observation required?
- Is behavior numerical?
- Is behavior time related?
- Should data be ongoing or episodic?
 - If episodic, how often and when?

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Factors that Impact Data Collection
<ul style="list-style-type: none">• Frequency of Data Collection• Impact of Uncontrollable Factors• Ease of Data Collection• Appropriateness of Type of Data• Observer Reliability• When and who

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Reviewing the Data
<ul style="list-style-type: none">• What is minimal acceptable performance?


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Reviewing the Data

- Analyzing Errors
- Making Data Meaningful

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Reviewing the Data

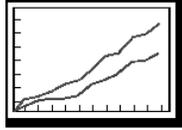
Making Data Meaningful

Date	Message	Method	Outcome
9/12	Play with cars	Picture card	Successful
	Paint	VOCA	Successful
	Take picture home	Voice	Three attempts
9/13	Look at book	VOCA	Successful
	Play at sand table	VOCA	Successful
	Want bigger cup	Voice	Not Successful
	Other student took his	Voice	Not Successful/tantrum
	Ready to quit	VOCA	Successful
9/14	Paint	VOCA	Successful
	Take picture home	VOCA	Successful
	Hungry	Voice/gestures	Successful
	Play with cars	VOCA	Successful
	Other student took his	VOCA	Successful

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Using Graphs to Analyze Data

- Types of Graphs
 - Line Graphs
 - Bar Graphs
 - Other
- Transferring Data to a Graph



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Gather data from a variety of sources...



"That was wonderful, Leonard, but according to our earlier assessments, you are not able to do that."

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Quality Use of Data

- Data are critical.
- Planning starts early.
- Team is involved and everyone knows their role.
- Data are actually used!
- Only way to be cost effective and efficient.



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Outcomes from Use of Data



- Data shows that AT makes a difference.
- Data shows that AT does NOT make a difference.
- Data is inconclusive.
- Data may show unexpected information that requires framing a new question.

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Resources for Data Collection



- Data collection forms
- www.natennetwork.net
- *How Do You Know It? How Can You Show It?* manual
<http://dpi.wi.gov/files/sped/pdf/at-know-it-show-it.pdf>

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Resources

Six + One Writing Traits, educationnorthwest.org/traits/traits-rubrics

Babkie, A. (2013). Data Collection. In S. Henry & B.S. Myles, *The comprehensive autism planning system (CAPS) for individuals with autism spectrum disorders and related disabilities: Integrating evidenced-based practices throughout the student's day* (2nd ed.; pp. 125-140). Shawnee Mission, KS: AAPC Publishing.

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