

A Closer Look at Data Collection on AT Trials and Use

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Data Collection for Assistive Technology

Adapted with permission from
“How Do You Know It? How Can You Show It?”
Reed, P., Bowser, G., & Korsten, J.
Wisconsin Assistive Technology Initiative (2002)



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Framing the Question...



Asking the Right Question

Examine the original question to get at the root of the issue that needs to be answered.

- **Design question to;**
 - Generate an unbiased, genuine answer.



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Asking the Right Question

Common Errors

- Question is
 - Too broad
 - Too specific
- Team members are unfamiliar with what technology can do related to the concern area
- Team members rely on personal opinions/experiences
- Team member disagreement on question(s) to be asked



Common Types of AT Questions

When teams ask questions about a child's use of AT, the questions can fall into one or more of the following areas.

- What is the difficulty?
- What's currently happening with/out AT?
- Can AT solve the problem?
- What type of AT is needed?



Data Review

Planning before data collection ensures that progress can be effectively and efficiently monitored.

- **Ask the following questions:**
 - What is the goal of AT?
 - What IEP goals are supported?
 - What answers will be obtained by data collection?
 - How will the data be collected?
 - What will identify success?



Data, What's the Fuss and Why?

Questions can only be answered if specific information about student performance is collected and analyzed.

- Observable/Measureable performance
- Memory fails
- Adds an objective “voice” to observations
- Different perceptions of events and what is to be measured.

Definition



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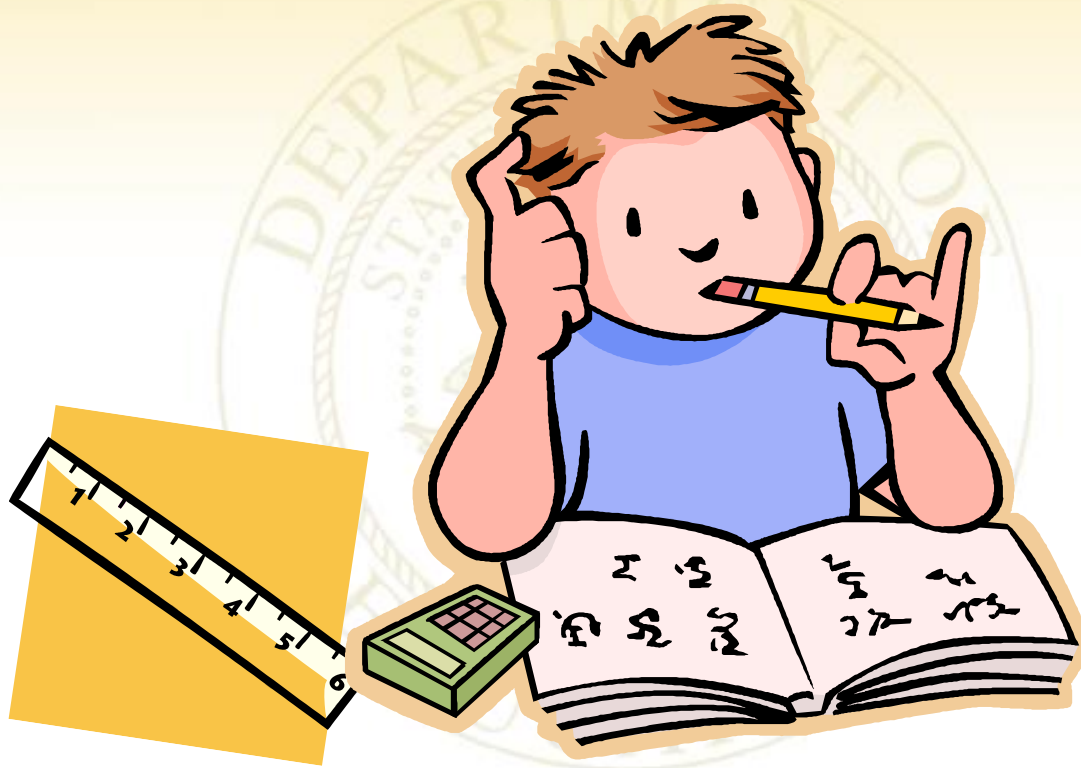


When Collecting Data

- Clarify nature of problem
- Determining baseline
- Analyze
 - Choose specific AT
 - Determine effectiveness
- Identify difficulties



Data Driven Decisions (D³)



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Data Driven Decisions (D³)

	Tools Used			
Date	Calculator	Number Line	% Correct	Comments
11/04		X	70%	Baseline
11/05		X	76%	Baseline
11/06		X	72%	Self selected
11/07		X	65%	Self selected
11/11	X		80%	Self selected
11/12		X	75%	Self selected
11/13	X		90%	Teacher directed
11/14	X		88%	Self selected



The Data Drive....

Determining What and How to Measure



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Know What is Measured!!!

Students frequently struggle with multiple aspects. Technology alone rarely addresses all of the student's needs.

- **Types of Change**
 - Quality
 - Quantity



Aspect Measurement

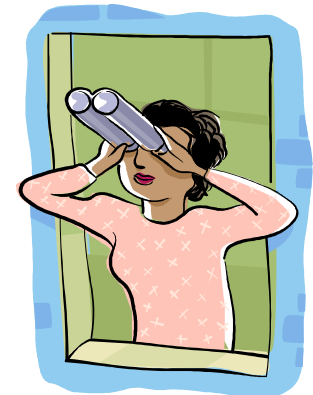
What to Look at and When

- **Components**
 - Speed
 - Accuracy
 - Spontaneity
 - Duration
 - Latency
- **Schedule**
 - Ongoing
 - Episodic (probe)



Ways to Gather Data

- Student Interview
- Work Sample Review
- Observation
- Video taping



Student Interview

Important that it is not the only element considered.

- **How**

- Conversation
- Journal
- Questionnaire

- **Why**

- Technology exploration
- Personal preference
- Student's ownership



Work Sample Review

- **Most Common**
- **Data source**
 - Permanence
- **Flexibility**
 - Quantity and/or
 - Quality



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Considerations with Work Sample Reviews

A review of the student's work without information on processes and/or strategies yields a partial answer.



Work Sample Review Sheet

Type of Work	Date	Tool Used	Readability
Test-timed	10/6	P/P	~
Test-not timed	10/9	P/P	~
Report	12/13	VR	3.1
Assignment /?'s	12/13	VR	3.3
Test-timed	1/10	VR	3.6
Report	1/19	VR	3.2
Report	1/30	VR	4.1
Test-timed	2/2	VR	5.4
Report	3/7	VR	6.9



Rubric Analysis

Standards-Based Assessment Rubric

Mode and Grade of Writing: Kindergarten Informational

	Exceeds Expectations 4	Meets Expectations 3	Approaching Expectations 2	Expectations Not Met 1
Ideas	<ul style="list-style-type: none"> Student develops two or more sentences that give facts about one topic. 	<ul style="list-style-type: none"> Student dictates or writes one complete thought that expresses a fact about a topic. 	<ul style="list-style-type: none"> Student draws a picture and orally expresses one fact about a topic. 	<ul style="list-style-type: none"> Student's oral expression is not a fact about a topic.
Organization	<ul style="list-style-type: none"> Each idea (fact) flows to the next one. The order of the sentences makes sense. 	<ul style="list-style-type: none"> Student dictates or writes facts about one topic without any order. 	<ul style="list-style-type: none"> Student writes or dictates facts that jump from one topic to another. 	<ul style="list-style-type: none"> Student shows no evidence of making a plan for writing ideas.
Style	<ul style="list-style-type: none"> The article has a title that tells what the writing is about. Student uses nouns, verbs, and adjectives to write complete sentences. 	<ul style="list-style-type: none"> Student uses words that enhance meaning. Uses a few action verbs. Uses title for writing. 	<ul style="list-style-type: none"> Student writing is confusing. The title for writing is nonspecific. 	<ul style="list-style-type: none"> No title for writing Facts are unclear. Words used do not make sense.

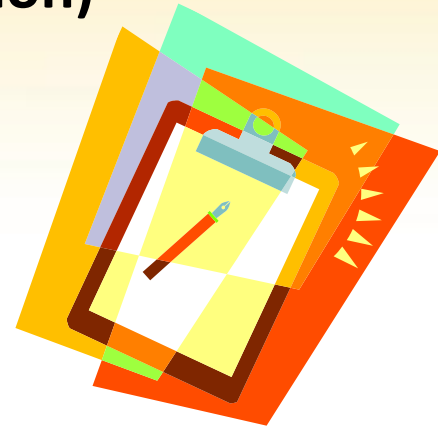
Observation

- Adds information to other forms
- Two types
 - Anecdotal
 - Event Recording



Anecdotal Observation Guide

- **Describe the setting (significant information)**
 - Student location
 - Activity
 - Noise level
- **Make note of**
 - What student says and does
 - What others say and do with the student
- **Differentiate information**
 - What are Impressions vs. actual facts
- **Note Time**
 - Be exact




Event Recording

- **Observable (Discrete) event**
 - Obvious beginning and end
- **Benefits**
 - Accuracy
 - Seamless recording



Event Recording Data

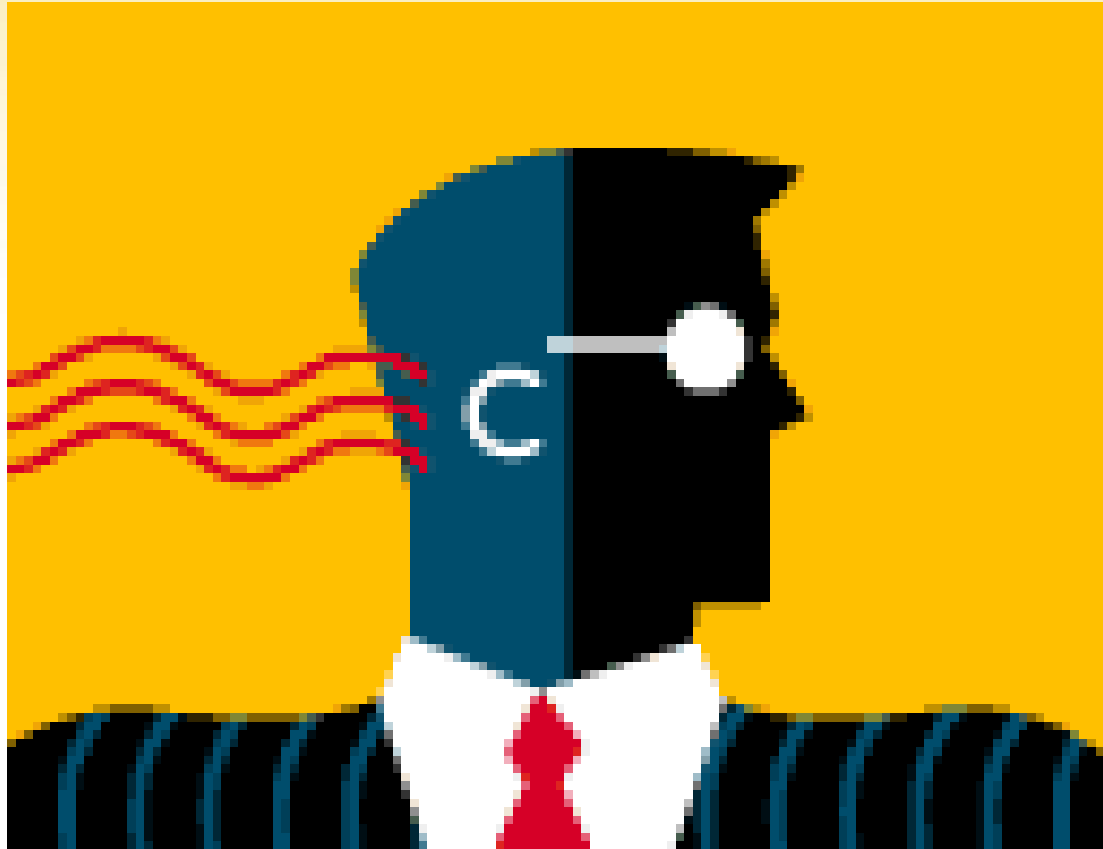
Date	Phrase	# Opportunities	# Correct	% Correct
5/11	What do you see?	14	5	36%
5/12		14	5	36%
5/13		14	7	50%
5/14		14	8	57%
5/15		14	9	64%
5/18		14	7	50%
5/19		14	11	78%
5/20		14	12	89%
5/21		14	14	100%
5/22		14	11	78%



Data Decision

Type of Information	Conditions	Potential Data
Interview	<ul style="list-style-type: none"> • Student must be able to provide information and/or not observable 	<ul style="list-style-type: none"> • Preferences, feelings, intentions
Work Sample Review	<ul style="list-style-type: none"> • Time/opportunities to respond constant • Time constant or unimportant and opportunities vary • Time/opportunities vary 	<ul style="list-style-type: none"> • # correct responses • % correct responses • Rate correct responses
Observation		
Anecdotal	<ul style="list-style-type: none"> • Event occurs infrequently or not identified 	<ul style="list-style-type: none"> • General information, related factors, # occurrences
Event Recording	<ul style="list-style-type: none"> • Time/opportunities to respond constant • Time constant or unimportant and opportunities vary • Time and/or opportunities vary 	<ul style="list-style-type: none"> • Number of occurrences • Percentage of occurrences • Rate of occurrences

Analyzing Your Data



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Critical Factors Impacting Data

- **Frequency**
- **Unexpected Factors**
- **Ease (user friendly)**
- **Appropriateness**
 - Percentages
- **Observer Reliability**
 - Inter-observer reliability
 - Reactivity
 - Observer drift
 - Complexity
 - Expectancy



Analyzing Data

Minimum Performance

- **Grounded in functional goals**

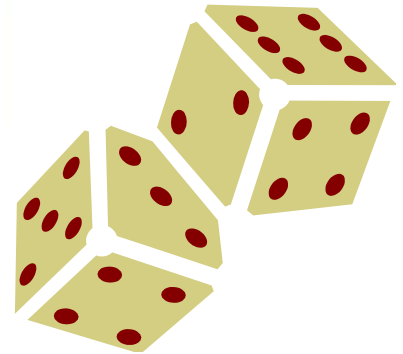
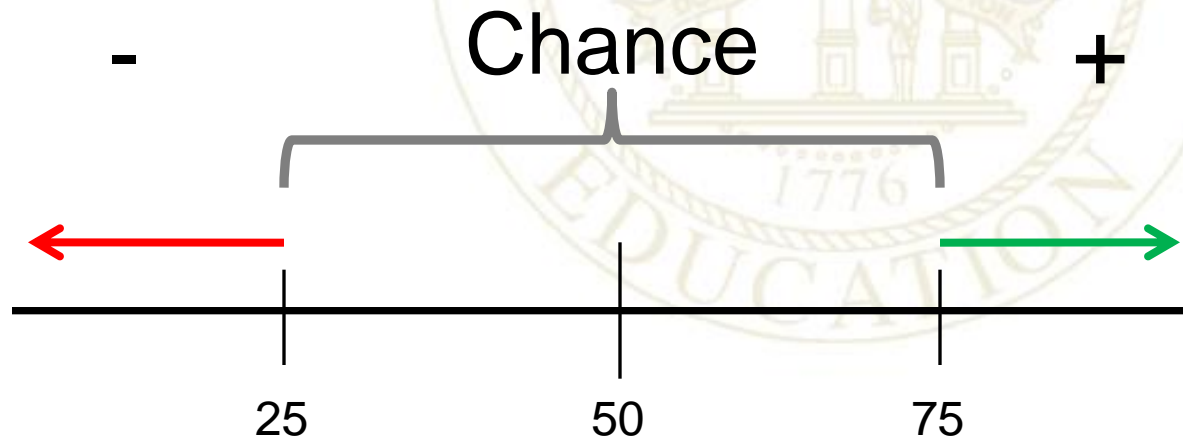
Student will use augmentative communication to request a snack with 85% accuracy on 5 consecutive days.



Identify Mastery Correctly

It is critical to identify what it will take to show that a student has mastered a goal.

Luck or Skill



Observing Patterns in Data

“Percentage Only Data” without pattern observation can lead to misinterpretation of the data



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Prompting Effects on Data

Prompting levels directly impact performance and data. High levels of support decrease student independence.

- **Environmental Cues**
- **Open ended questions**
- **Partial verbal and/or physical prompt**
- **Request verbalization**
- **Full model**



References

- How Do You Know It? How Can You Show It?
<http://www.wati.org/content/supports/free/pdf/KnowItShowItJan09.pdf>
- Hey, Can I Try That?
<http://www.wati.org/content/supports/free/pdf/HeyCanITryThat08.pdf>
- Data Collection Sheets from NATE Network.org , Manuals and Forms tab
<http://www.natenetwork.org/>



Questions



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