

Data Collection for Assistive Technology

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www.gatfl.org

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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.



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?

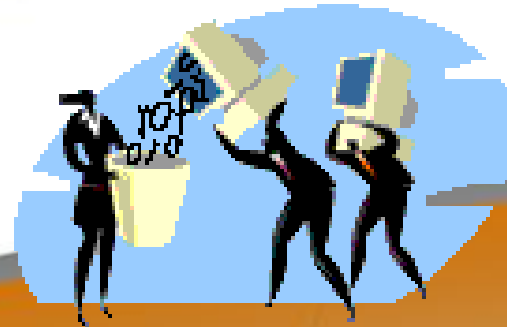
Questions can only be answered if specific information about student performance is collected and analyzed.

- 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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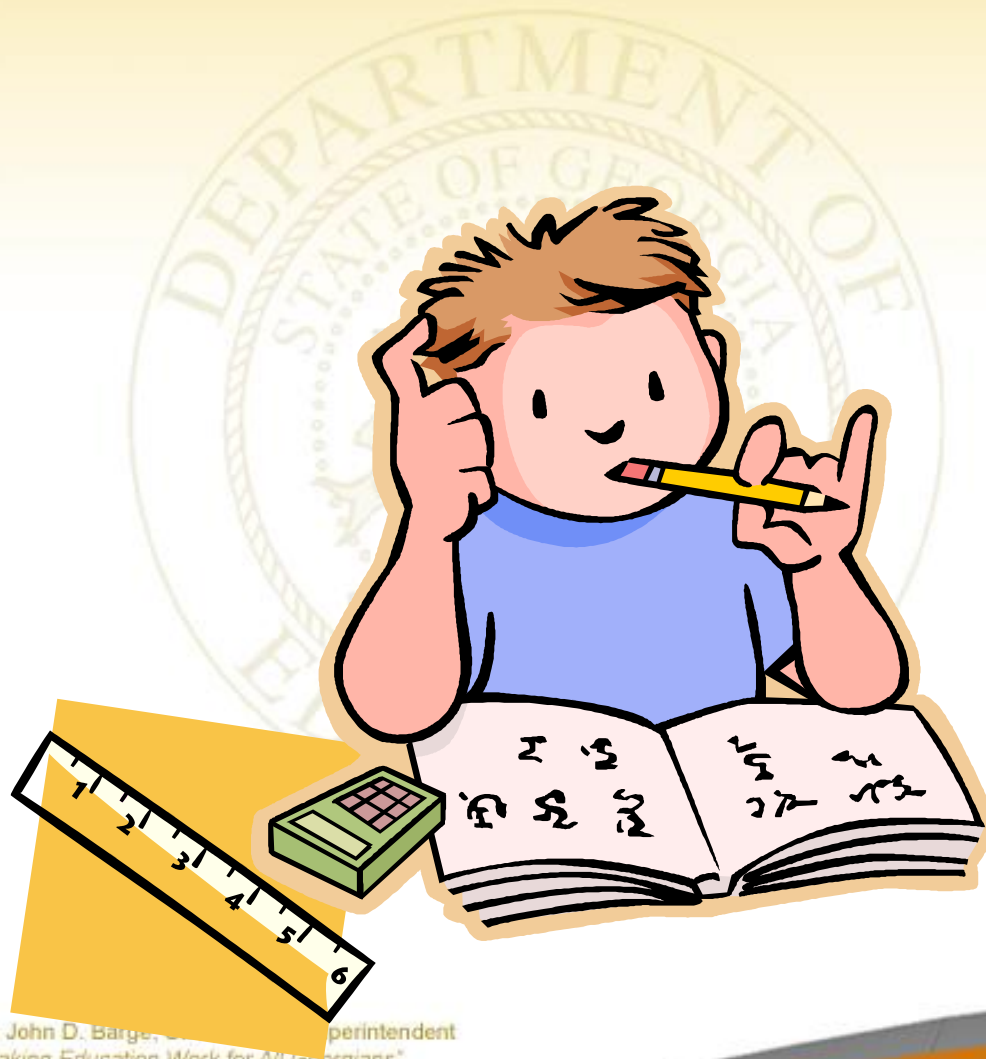


When Collecting Data

- 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)

Date	Tools Used		% Correct	Comments
	Calculator	Number Line		
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



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.

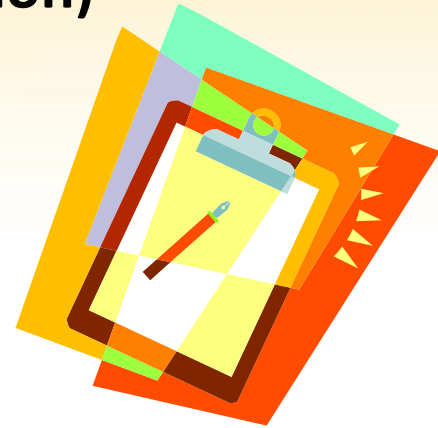
Observation

- **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

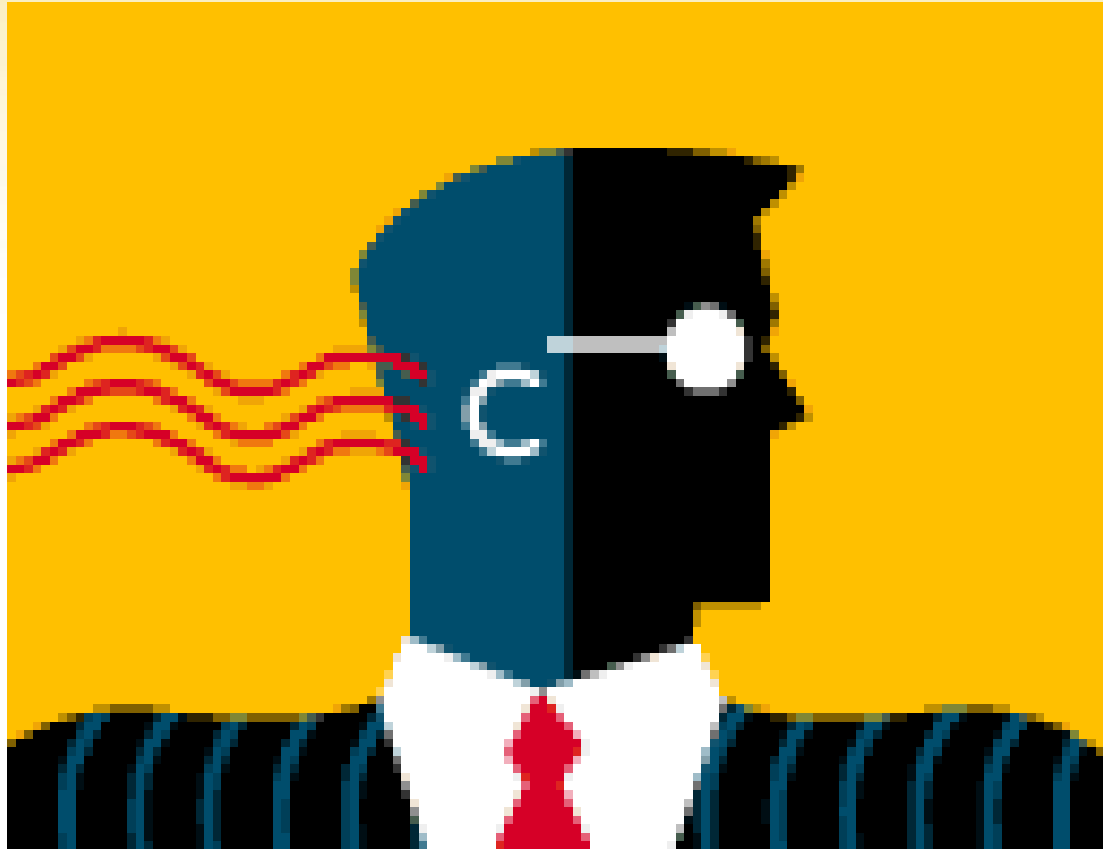
Date	Phrase	# Opportunities	# Correct	% Correct
5/11	What do you see?	14	5	36%
5/12		14	5	36%
5/13		14	7	50%
5/14		14	8	57%
5/15		14	9	64%
5/18		14	7	50%
5/19		14	11	78%
5/20		14	12	89%
5/21		14	14	100%
5/22		14	11	78%



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**

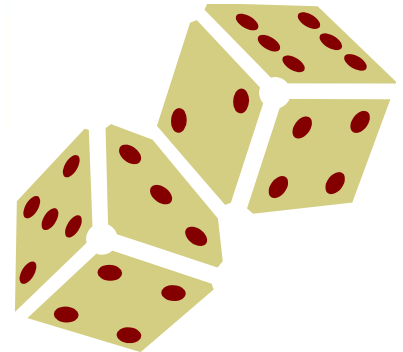
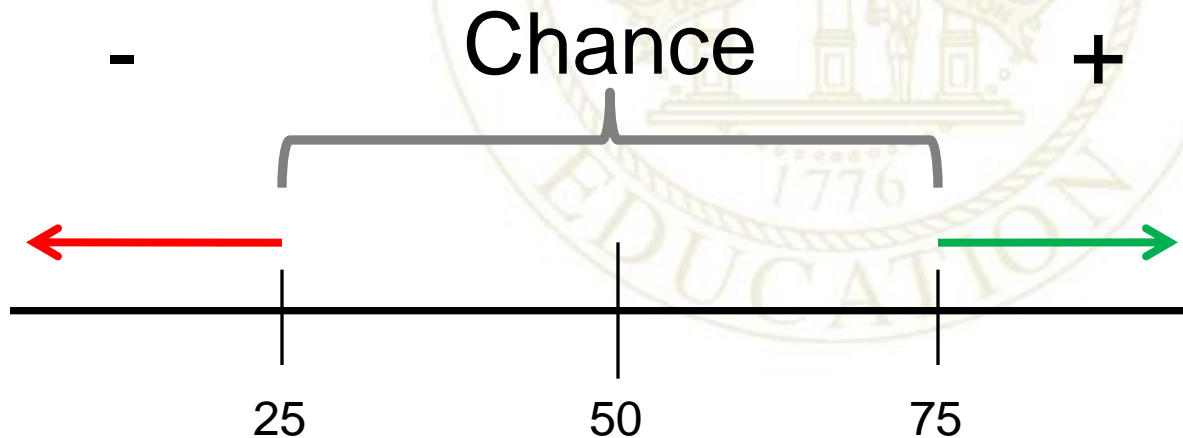
Student will use augmentative communication to request a snack with 85% accuracy on 5 consecutive days.



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



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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