

# Using Dynamic Assessment to Reduce Bias and Identify Learning Potential

Marie C. Ireland, M.Ed., CCC-SLP, BCS-CL

“Dynamic assessment measures how a student responds to intervention and the difference between what the student can learn unaided, and what he or she can learn with assistance....” (Virginia Department of Education, 2013)

After testing, have you ever...

- Asked a follow up question because you wanted to know what the child was thinking?
- Given a second try without a timer?
- Given additional practice?
- Paraphrased the directions?

**How was that shared with the team?**

## The Predictive Validity of Dynamic Assessment A Review

“In general, there is evidence that DA can predict unique achievement not tapped by traditional achievement or traditional cognitive testing.” (Caffrey, Fuchs & Fuchs, 2008)

## Why Dynamic Assessment is Necessary

A Must Read Publication Spaulding, T., Plante, E., Farinella, K. (2006) *Eligibility Criteria for Language Impairment -Is the Low End of Normal Always Appropriate?*, *Language, Speech, and Hearing Services in Schools* Vol.37 61-72

“The practice of applying an arbitrary low cut-off score for diagnosing language impairments is frequently unsupported by the evidence that is available ...in test manuals.”

<b>Expectations in the Literature</b>	<b>Sensitivity <math>\geq</math> 80%</b> Correct identification as impaired	<b>Specificity <math>\geq</math> 80%</b> Correct identification as typical
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### Diagnostic Accuracy of Tests

- Sensitivity
- Specificity
- Culturally loaded items
- Language loaded items
- Research shows issues with tests

**Issues with Standardized Test Data**

- Teams cannot address difference vs. disorder
- There is a high chance of over/under identification
- Documentation of educational impact and need for specialized instruction is missing
- Eligibility decisions are not in compliance and less defensible

“Perhaps the most discouraging finding of this study was the lack of correlation between frequency of test use and test accuracy...assuming the ideal goal for diagnosis is 100% correct classification of children, accuracy levels should correlate with frequency of test use.”

Betz, Eickhoff, & Sullivan, 2013

**At Risk and Low Socio-Economic Status**

- 30 Million Word Gap
- Emotional Keyboard
- Impulsivity and Behaviors
- Dialect
- Metacognitive Verbs

**Culture and Language Load**

- Will you get a true measure of ability and achievement?
- Consider and address in reports as appropriate the impact of:

- Tier 2 Words

Research Shows culture and language can impact a score by up to 35 SS pts

(Rhodes, Ochoa, and Ortiz, 2005) *Assessing Culturally and Linguistically Diverse Students: A Practical Guide*, Guilford Press

**An interview with Joe Elliott and Carol Lidz**

“...dynamic approaches may prove more valuable in overcoming the biased judgements that can result from the tendency of children from minority or disadvantaged backgrounds to under-perform in the assessment...” (Elliott, Lidz, & Shaughnessy, 2004)

**Dynamic assessment and response to intervention: Two sides of one coin**

“Dynamic Assessment is rooted in the concern that the information provided by traditional (conventional or static) intellectual assessment is inaccurate with regard to such children’s intellectual potential and of no real value to teachers”(Grigorenko, 2009)

**Dynamic Assessment**

- Statistically better than testing for distinguishing *difference* from *disorder*
- *Sensitivity and specificity has been documented up to 100%*
- May be used as part of the evaluation to gather relevant data

*“These methods can help identify learning potential and eliminate bias for students with cultural and linguistic differences or socio-economic risk factors.”*

Virginia Department of Education, 2013

**Dynamic Assessment Approaches**

**Clinically Oriented**

- “frequently change how they teach to determine the type of intervention with which the student is most successful”
- “everchanging process to maximize student achievement”

**Standardization Oriented**

- “assess student achievement in response to a more standardized intervention”

Dynamic Assessment methods (Gutiérrez-Clellen & Peña, 2001) include:

1. Graduated Prompting
2. Testing Limits
3. Test-Teach-Retest

<p><b>Graduated Prompting</b></p> <ul style="list-style-type: none"> <li>• Number of prompts required</li> <li>• Type of prompts required <ul style="list-style-type: none"> <li>○ Model</li> <li>○ Question</li> <li>○ Cue</li> <li>○ Hand of hand</li> </ul> </li> <li>• Transfer of skills to near and far targets <ul style="list-style-type: none"> <li>○ Near targets - same item same context</li> <li>○ Farther target - same item in different setting</li> <li>○ Farthest targets - use the concepts in other tasks</li> </ul> </li> </ul>	<p><b>Testing Limits</b></p> <ul style="list-style-type: none"> <li>• Simple vs elaborated feedback</li> <li>• Elaboration on why the answer is correct</li> <li>• Explanation of principles involved in the task</li> </ul>	<p><b>Test-Teach-Retest</b></p> <ul style="list-style-type: none"> <li>• Uses existing “test” data</li> <li>• Provide mediated learning experiences</li> <li>• Compare changes test-retest (Pre-Post)</li> <li>• Consider Student and SLP effort</li> <li>• Informs effectiveness of prompts and response to prompts</li> <li>• May be done using a variety of materials or target any type of skill</li> <li>• When using norm referenced tests scores, use similar items for the retest data - do not use the test again.</li> </ul>
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**Data from Dynamic Assessment**

- Mediated Learning
  - Strategies used
- Examiner and client effort
- Modifiability, Stimulability or Responsiveness
  - Prompts
  - Errors
  - Confidence
  - Rate

**Uses for Dynamic Assessment data**

- Inform classroom instruction
- Inform intervention
  - In addition to core instruction
  - MTSS or Rtl
- As a part of the IDEA evaluation and eligibility process

Component <https://www.asha.org/practice/multicultural/dynamic-assessment/module-2/>

Intentionality	Teach, create awareness in the child
Meaning	Help child to understand why task is important
Transcendence	Help child think hypothetically
Competence	Teach child to be self-regulated & active participant in own learning

**Mediated Learning Strategies**

- Assist student in meeting target and building competence
- Examples include:
  - Provide a model
  - Additional time
  - Paraphrasing or shortening of directions
  - Visual prompts or cues
  - Encourage elaboration with questions

**Consider Home Culture**

- Examine experiences with
  - Locus of control for behavior
  - Structure and use of routines
  - Use of rigid time limits
  - Temporal concepts (first, next, then)
  - Language and story use

**Consider Responsiveness**

**Consider Transfer & Effort**

- Transfer

- How well does the child respond?
- Does the child maintain attention to task?
- Does the child utilize the learning strategies provided?

- How well does child apply new skills?
- Does child needs prompts to apply strategies?
- Examiner Effort
  - How much support did you provide?
  - How intense in the support?
- SLP’s Clinical Judgment
- Practice improves performance
- Inter rater reliability is stronger at the ends of the spectrum
- This is NOT the only piece of data used in decision making

**Addressing Bias in Evaluations**

*Why Does The Gap Persist?*

“Three-year-old children in professional families had a vocabulary as large as that of the *parents* in the study who were on welfare.” Barton, 2004

<https://www.ascd.org/el/articles/why-does-the-gap-persist>

Semantic Knowledge

- Static Assessment
  - Vocabulary tests measure *exposure to words*
  - Highly effected by SES and mother’s education
- Dynamic Assessment
  - Measures *ability to learn new words*
  - Differentiates WNL from SLI
  - Fast Mapping (Dollaghan, 1987)

The Impact of Poverty

- Likely deficits in:
  - Personal efficacy behaviors
    - Perseverance
    - Self talk
  - Information Capital
    - Knowledge based reasoning
    - Analytic thinking
- Tier 2 words (high FQ not domain specific - similar, fortunate)

Tier 2 Words

- Words that are used in text and during classroom discussions.
- Instruction in general education should address these needs
- Search “Tier 2 Vocabulary”
  - <https://www.flocabulary.com/wordlists/>
  - <https://www.hpcsd.org/site/default.aspx?PageType=14&DomainID=27&PageID=16944&ModuleInstanceID=23854>

Sample Tasks for Dynamic Assessment

- Task Imitation
- Imitating tasks allows examiner to view skills in context
- What errors are made? Why?
- What prompts are helpful?

Task Imitation Informs

- Personal Efficacy Behaviors
  - Self talk, perseverance, etc.
- Attention
- Imitation
- Problem Solving
- Memory
- Emotional state

### Non Word Repetition Tasks (NRT)

- “Findings also confirmed that the NRT is a culturally nonbiased measure of language processing.
- Not sufficient on its own, may provide a useful index to *assist* in ruling in or ruling out language disorder.” (Weismer et al., 2000)
- Original work by Dollaghan & Campbell (1998)

### Other Dynamic Assessments of Language

- Register shifts
- How to ask specific questions
- Tier 2 vocabulary
- MCV and internal states
- Executive function skills

### Fast Mapping

- Measures the ability to learn novel words from exposure rather than vocabulary tests that differentiate socio-economic classes
- Significant differences between typically developing and children with SLI
- Dollaghan, C. A. (1987). Fast Mapping in Normal and Language-Impaired Children. *J Speech Hear Disord*, 52(3), 218-222. doi: 10.1044/jshd.5203.218.

### Fast Mapping

- Presentation of item and novel word
- Did incidental learning occur?
  - Receptive language
  - Expressive language
- Are prompts are required?
- What techniques assist the student in learning new words?

### Destination Imagination

- Quick interactive tasks
- “Instant Shaker” or Printables
- Designed to stimulate creative processes
- Use to examine:
  - Organization
  - Planning
  - Language
  - Problem Solving

### Dynamic Assessment and Language Sample Analysis

Standardization Oriented Approach	Clinically Oriented Approach
<p><b>DYMOND</b></p> <ul style="list-style-type: none"> <li>• The direct link to <a href="#">subscribe to the DYMOND</a> email list and get the DYMOND sent to the user's inbox, receive ongoing updates and get questions answered if needed</li> <li>• The <a href="#">one page document with information on this project</a> and the DYMOND with instructions on how to get started, including how to get the DYMOND sent right to their inbox.</li> <li>• Researchers conducted four studies on the DYMOND with approximately 800 students.</li> <li>• Sensitivity and specificity (measures of classification accuracy) are consistently above 80% across a very diverse sample of students, including those who are English language learners, rural/urban, high, moderate, and low SES, and race/ethnicity.</li> <li>• Currently the test results are interpreted using criterion referencing, but they are in the process of collecting data nationally to develop norms.</li> </ul> <p><b>DYMOND Materials</b></p> <ul style="list-style-type: none"> <li>• Parent Permission (required for research)</li> <li>• Child Assent (required for research)</li> <li>• Stimulus Materials</li> <li>• Student Protocols</li> <li>• Interpretation Flowchart</li> </ul>	<p>Consider using School-age Language Assessment Measure (SLAM) cards for language sample analysis using test-teach-retest</p> <ol style="list-style-type: none"> <li>1. Have student order cards and tell the story (test)</li> <li>2. Provide mediated learning for areas that are weak (teach)</li> <li>3. Have student order second set of cards and tell the story (re-test)</li> </ol> <p><b>School Age Language Measure (SLAM) Cards</b></p> <ul style="list-style-type: none"> <li>• Developed by Dr. Cate Crowley</li> <li>• Use for story generation and retells <ul style="list-style-type: none"> <li>○ Baseball (Secondary)</li> <li>○ Lost Cellphone (Secondary)</li> <li>○ Bunny (Pre-K and Elementary)</li> <li>○ Dog Comes Home (Pre-K and Elementary)</li> </ul> </li> </ul> <p><b>Narrative Teach Phase</b></p> <ul style="list-style-type: none"> <li>• Identify areas for Mediated Learning</li> <li>• Provide explicit instruction and teach strategies</li> <li>• Use of visual supports</li> <li>• Icons to represent story grammar elements</li> <li>• Use of descriptive language</li> <li>• Use of metacognitive verbs and internal states</li> </ul> <p><b>Narrative Retest Phase</b></p> <ul style="list-style-type: none"> <li>• Retest using second set of cards</li> <li>• Assess student modifiability or responsiveness <ul style="list-style-type: none"> <li>○ Errors</li> <li>○ Prompts</li> <li>○ Confidence</li> <li>○ Disruptions</li> <li>○ Rate</li> </ul> </li> </ul>

## Case Studies

### Sample Case...Now What?

- PLS-3 score of 76SS (95% confidence interval 70-86)
- After book reading, prompted comprehension questions indicate skills with explicit features such as identification of who, what, and identification of problem (score 5/5) and limited performance in implicit areas such as describing feelings, making inferences, using dialogue, and theme (score 1/5). The student was able to make a prediction about the story.

### Plan Your Dynamic Assessment

- What would you do to probe modifiability?
- What strategies would you try?
- What targets or examples will you use?

- The child was able to maintain focus during play based routines but did not use dialogue in interactions between character toys.

### Meet Carlos

- Pretest Carlos was able to answer 5/15 verbal problem solving questions correctly. (33%) Issues with who, what, and why questions. Teacher has concerns about English language skills.
- What would you do to probe modifiability?
- What targets or examples will you use?

### Mediated Learning Experience

- This strategy was practiced with all missed items;
- Carlos was instructed to look at missed scenarios and ask himself the following questions:
  - Who (is involved)
  - What (are they doing)
  - Why (are they doing it)
- Carlos was given feedback as to completeness and appropriateness of response.
- Examiner Effort Moderate examiner effort was required to teach the questioning technique

### Results of Dynamic Assessment

- Posttest Carlos was able to answer 14/18 similar contextual problem solving questions correctly (78%), a significant improvement over the pretest performance.
- Results indicate that Carlos is able to use the English language effectively to learn new skills but requires explicit practice and feedback.

Select a common task or assessment

- What performance would reveal a pattern for further investigation?
- What would you do to probe modifiability?
- What strategies would you try?
- What targets or examples will you use?

### Meet Jane

Jane has difficulty with writing assignments and recalling information about science and history. She is referred for a suspected language impairment. When asked to retell a story using SLAM cards, Jane includes only characters and setting information. Her story is short. She includes strong vocabulary and correctly uses pronouns. No conjunctions are used.

### Teach Phase

- SLP teaches missing elements
- Story grammar elements
- Conjunctions (but, or)
- SLP models a story using
  - story grammar icons to include all parts
  - emphasizes use of conjunctions

### Retest Phase

- Jane is provided a second story model and is asked to retell the story.
- Jane includes 3 grammar elements
- When asked about what the main character is thinking and feeling also adds feelings and reactions
- Jane uses the conjunctions and, but & or without prompts

### Results

- Jane is able to retell a story using all required parts with minimal effort and minor prompting.
- Effective strategies included
- Visual icons to highlight important story grammar elements
- Explanation of why and how to use conjunctions

### Small Group Case Study Example

- School age student with scores  $>2$  s.d. below the mean on omnibus language measure (SS 67: 95% confidence interval 62-77) and vocabulary assessment (SS 65).
- Student enjoys shared reading but has had limited experience with books and no formal school as family are migrant workers.
- Observation revealed parent does not provide expansions or teach unfamiliar vocabulary.

### References and Resources

- 📖 Caffrey, E., Fuchs, D., & Fuchs, L. S. (2008). The predictive validity of dynamic assessment: A review. *The Journal of Special Education, 41*(4), 254-270.
- 📖 Dollaghan, C. A. (1987). Fast mapping in normal and language-impaired children. *Journal of speech and hearing disorders, 52*(3), 218-222.
- 📖 Dollaghan, C., & Campbell, T. F. (1998). Nonword repetition and child language impairment. *Journal of Speech, Language, and Hearing Research, 41*, 1136-1146.
- 📖 Elliott, J. G., Lidz, C., & Shaughnessy, M. F. (2004). An interview with Joe Elliott and Carol Lidz. *North American Journal of Psychology, 6*, 349-360.
- 📖 Grigorenko, E. L. (2009). Dynamic assessment and response to intervention: Two sides of one coin. *Journal of learning disabilities, 42*(2), 111-132.
- 📖 Gutiérrez-Clellen, V. F., & Peña, E. (2001). Dynamic assessment of diverse children: A tutorial. *Language Speech and Hearing Services in Schools, 32*(4), 212-224.
- 📖 Weismer, S. E., Tomblin, J. B., Zhang, X., Buckwalter, P., Chynoweth, J. G., & Jones, M. (2000). Nonword repetition performance in school-age children with and without language impairment. *Journal of Speech, Language, and Hearing Research, 43*(4), 865-878.