Early Prediction and Intervention for Dyslexia,
Before Grade School Begins
Part 1 (1:15-2:15)

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Warm greetings from Boston!
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• Unitary curriculum emphasizing spoken and written language relationships.
• Offering dual teacher certification in both Speech-Language Pathology and in Reading.

Special “Thanks!”

Dianne King, Alison Webster, and Missy Schraeder
Dubard School of Language Disorders
Gulf Coast Education Initiative Consortium

Social and Political Questions

• Why worry about identifying children at risk for dyslexia in Kindergarten, before formal literacy instruction begins?
• Why not just wait to see who fails in response to instruction?

Costs of Waiting Until Children Fail

FINANCIAL IMPACT:
• > $1.5 million/person over one’s lifetime (2002 Roher study, LDA Canada)

SOCIAL-EMOTIONAL IMPACT:
• External locus of control
• Depression/Anxiety/Anger

From Grade 3 and beyond, literacy intervention becomes less effective.
Early detection and intervention for literacy leverages neural plasticity and results in significantly greater reading/writing improvement.

Objectives

Diagnosticians and teachers will be better able to:

1. Identify Kindergarten predictors of Grade 2 & 3 dyslexia or language learning disability
2. Link predictive patterns to preschool and kindergarten teaching interventions.

“Simple View of Reading” (and Writing)

(Adapted from Gough & Tunner, 1986)

Factors Involved in Reading / Writing

(Hook & Haynes, 2015)

Extrinsic Factors: Culture, Home & Teaching Environments

Predictors of Listening Comprehension / Oral Expression

Extrinsic Factors: Culture, Home & Teaching Environments
Magnitude(s) of Variation Predicted

R & E Vocabulary

R & E Syntax

R & E Discourse structure

Language Comprehension/ Language Expression

Test of Lexical Store:
Classic Receptive Vocabulary Task
Tester says, “Point to drinking.”

Diagnostic Implication
For students who can decode, receptive vocabulary is the single most powerful predictor of reading comprehension.

Teaching Recommendations
1. “Structure the lexicon” — teach vocabulary in a systematic, structured way that is linked to an organizing theme.
2. Emphasize phonological and semantic characteristics of target vocabulary
3. Practice vocabulary recognition and use at word, sentence and paragraph levels

Retrieval from Lexicon:
Confrontation Naming Task
(Tester: “This teacher is pointing at a….”)

Diagnostic Implications
1. If expressive vocabulary score is significantly below receptive vocabulary score, this indicates a word retrieval problem.
2. Word retrieval difficulties are associated with deficits in sentence and paragraph level language formulation.
1. Provide students with mnemonics and strategies to cue word retrieval.

2. Provide word-, sentence- and paragraph-level opportunities for understanding and using thematic key vocabulary.

**Teaching Recommendations**

**Language Comprehension**

**Language Expression**

**Key Teaching Principle:**
Exploit listening-speaking relationships

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**Three Mini-Cases**
(Tip: 15 standard score (SS) points = significant difference)

<table>
<thead>
<tr>
<th>Ronny</th>
<th>Anna</th>
<th>Bill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rec Voc: SS = 100</td>
<td>Rec Voc: SS = 82</td>
<td>Rec Voc: SS = 78</td>
</tr>
</tbody>
</table>

What pattern(s) do you see?
What might explain them?
Recommendations for each student?

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**Sentence Structure:**
Classic Receptive Task (Recognition)

Tester: “Point to the girl who is wearing her new raincoat, even though she doesn’t need it.”

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**Diagnostic Implication**

After vocabulary ability, receptive sentence processing is the best linguistic predictor language comprehension.
Teaching Recommendations

- Systematically teach students how to recognize a hierarchy of sentence patterns, from simple to complex.
- Begin with extensive scaffolding, and gradually remove scaffolding to ensure independent recognition.

Classic Expressive “Syntax” Task
Tester: “Use the word ‘while’ in a sentence about the picture.”

Teaching Recommendations

1. Systematically instruct oral and written formulation of a hierarchy of sentence patterns.
2. Make sentence work meaningful: integrate thematic vocabulary into sentence structure exercises.

Diagnostic Implication

Students who struggle with oral sentence formulation tasks are particularly at risk for deficits in oral and written language expression. Sentence formulation taps heavily into verbal working memory and meta-strategies for sentence formulation.

“Mini-Cases”
(Tip: 15 standard score (SS) points = significant difference)

<table>
<thead>
<tr>
<th></th>
<th>Joey</th>
<th>Elena</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rec Voc</td>
<td>83</td>
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<tr>
<td>Exp Voc</td>
<td>81</td>
<td>Exp Voc: 93</td>
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<tr>
<td>Sentence Proc</td>
<td>76</td>
<td>Sentence Proc: 106</td>
</tr>
<tr>
<td>Sentence Form</td>
<td>80</td>
<td>Sentence Form: 89</td>
</tr>
</tbody>
</table>

What pattern(s) do you see? What might explain them? Recommendations for each student?

Discourse Assessment (in brief!)

- **Receptive**: Any valid text-level listening comprehension measure (narrative vs expository)
- **Expressive**: Informal analysis of narrative or expository production at the multi-sentence level

If one has not assessed vocabulary and sentence processing carefully, though, how informative is discourse level assessment?
Factors Most Involved in “Language Learning Disability” (LLD) (Hook & Haynes, 2015)

Extrinsic Factors: Culture, Home & Teaching Environments

Two Helpful References…
