AN ORAL LANGUAGE SUCCESS STORY: RTI FOR NARRATIVE DISCOURSE SKILLS

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DISCLOSURE STATEMENT

My name is Dr. Linda Liss-Bronstein. I work for the Hartford Public Schools at the Betances Early Reading Lab Magnet School. I have no relevant financial or nonfinancial relationships to disclose.
CLOSE THE LANGUAGE GAP

Response to Intervention

Research ➔ Practice

Oral Language ➔ Embedded Professional Development
**RESEARCH BACKGROUND**

- The Simple View of Reading (Gough & Tunmer, 1986; Catts) implicates language on both sides of the language equation for reading (decoding & listening comprehension).

- Relatively mild oral language weaknesses were associated with severe reading comprehension difficulties” (Adlof, Perfetti & Catts, 2011).

- Inference-making facilitates a child’s ability to integrate the information in text or pictures to form a coherent mental representation of the narrative (Kintsch & Kintsch, 2005).

- As children gain more experience with listening to stories and/or story grammar they become more familiar with the causal structure of narratives which facilitates their inference making. (Cain & Oakhill, 2007; Lepola et al., 2012; Lynch et al., 2008, Oakhill & Cain, 2012).

- There is a developmental progression to the development of narrative story production and inference making (Westby, 1999, van Den Broek, 2005).
<table>
<thead>
<tr>
<th>CCSS RELATED TO STORY GRAMMAR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Kindergarten</strong></td>
</tr>
<tr>
<td>RL.K.2 With prompting and support, retell familiar stories, including key details.</td>
</tr>
<tr>
<td>RL.K.3 With prompting and support, identify characters, settings, and major events in a story.</td>
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<tr>
<td>RL.K.7 With prompting and support, describe the relationship between illustrations and the story in which they appear (e.g. what moment in a story an illustration depicts).</td>
</tr>
<tr>
<td>RL.K.9 With prompting and support, compare and contrast the adventures and experiences of characters in familiar stories.</td>
</tr>
</tbody>
</table>
GOALS OF THE STUDY

❖ To examine whether explicit and systematic story grammar intervention would improve the oral narrative discourse skills of kindergarten students who had been identified as having weak language abilities.

❖ To implement a Response to Intervention (RTI) model applied to narrative oral language skills.

❖ To study whether growth in narrative language skills would correspond with measurable growth in students’ inclusion of macrostructural and/or microstructural features and evidence of inference making in their narration of stories from pictures.

❖ To determine whether explicit instruction of story grammar that focused on retelling stories with picture support would generalize to other narrative tasks (i.e., to retelling stories heard without pictures).
TERMINOLOGY

- **Story Grammar**: refers to elements in a single story episode (character, setting, initiating event, internal response, plan, attempts, consequence and resolution).
- **Macrostructure**: For analysis, refers to the story grammar elements of a narrative discourse.
- **Literate Language**: Linguistic features unique to the decontextualized language found in text (elaborated noun phrases, conjunctions, adverbs, mental (e.g., *decided*) and linguistic (e.g., *explained*) verbs, and verb tenses).
- **Microstructure**: For analysis, refers to linguistic features of narrative discourse (e.g., temporal conjunctions: *first, next, then, finally* or causal conjunctions: *so, because*, adversative conjunctions: *but, instead*).
- **Point of Inference**: A point in the text where an inference is required.
PARTICIPANTS

- **Participants (N=31)** (low SES, 16 ELL, 3 SLI, 12 not identified)
- Kindergarten children at an urban public school
- Scored below the 35th percentile on the Fluharty-2 Preschool Screening Measure
- Speech and Language Screening Test at mid-year universal screening
- For matched pairs of students, one was randomly assigned to narrative intervention group and one to control condition that supplemented literacy skill instruction.
- Groups were not significantly different at the pretest assessment on narrative language measures and on vocabulary knowledge, letter naming fluency, and phoneme awareness.
- The narrative intervention group was significantly better nonword reading.
MEASURES

Narrative Language Measures

- Test of Narrative Language Development (TNL)
  - Narrative Language Assessment Index (NLAI)
  - Narrative Comprehension subtest
  - Oral Narration subtest

- Index of Narrative Complexity (INC-Progress Monitoring Tool, Petersen, Gillam, & Gillam, 2008)

- Picture-derived Inference Making Protocol (experimental measure)
OTHER LANGUAGE & LITERACY MEASURES

- Peabody Picture Vocabulary Test-4, Form A (only given at Pretest).
- DIBELS Letter Naming Fluency
- Nonword Reading Test: CVC nonwords

Phoneme Awareness test: Initial, medial & final sound identification, segmentation and blending tasks
PROCEDURE

- Each interventionist worked with two groups
  - Two Narrative Intervention groups
  - Two Control groups
- 6-weeks, 30 minutes a day
- Groups of 4-5 students
STEPS TO METACOGNITION & SELF-REGULATION

① Identify what component of a story will be generated using story grammar icons e.g. character, setting, initiating event etc.
② Look for and verbalize clues in the pictures; infer information that supports elaboration of the component.
③ Practice the language to express what was observed and inferred for component parts of story grammar.
④ Group and individual practice of the whole story with story icons and language cue words.
HIGHLIGHTS OF NARRATIVE INTERVENTION

- Icons used to represent story grammar elements/macrostructure,
  (Moreau, 2002; Petersen et al., 2008; Spencer & Slocum, 2010)
- Language cue words used as visual prompts for microstructure features (e.g., but, so, because)
- Scaffolded practice of literate language/microstructure with an emphasis on temporal, causal and adversative conjunctions related to story grammar discussions and practice.
PROTOCOL DESCRIPTION

Participants engaged in a sequence of activities that was repeated every six days and resulted in the group generation of a story from a picture story sequence, early decodable text and single picture scene.

1. Instructor guided students’
   a) verbalization of inferences,
   b) repeated practice of identification of component story features,
   c) and retelling of the complete story using icons to prompt inclusion of the entire story grammar

2. Order: Picture story sequence, early decodable books, single scene
HIGHLIGHTS OF CONTROL GROUP INTERVENTION

- Phoneme awareness, word chains, high frequency word practice prior to reading decodable text
- Read decodable text
- Draw/write favorite part of story
Figure 1. Test of Narrative Language (TNL) Comparison of Pre/Post Group Means

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Post</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Mean Change</td>
<td>0</td>
<td>0</td>
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</tbody>
</table>
Figure 2. Pre/Post Comparison on TNL Subtests

Group Mean Raw Scores

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
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</thead>
<tbody>
<tr>
<td><strong>Narrative Comprehension</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Intervention</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td><strong>Oral Narration</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Intervention</td>
<td>20</td>
<td>40</td>
</tr>
</tbody>
</table>
Figure 3. Effect Size Comparisons on the Narrative Language Measures at Post Test

<table>
<thead>
<tr>
<th>Measure</th>
<th>Control</th>
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<tr>
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<td>2.8</td>
</tr>
<tr>
<td>INC Micro</td>
<td>-0.05</td>
<td>1.02</td>
</tr>
</tbody>
</table>
INFERERENCE INTEGRATION PROTOCOL
BUILD METACOGNITION & SELF-REGULATION

1. Identify what component of a story will be generated, e.g. character, setting, initiating event etc. with story icon support (Moreau, 2002; Petersen et al., 2010; Spencer & Slocum, 2010)

2. Look for clues in the pictures; infer information that supports elaboration of the component.

3. Practice the language to express what was observed and inferred for component parts of story grammar with language cue words.

4. Integrate the parts into a whole story, organized by story grammar and retell the story generated by the group.
BRAIDY* TRANSFER TO KID-FRIENDLY TERMS WITH ICONS

- Setting
- Initiating Event
- Internal Response
- Plan
- Attempts
- Consequence
- Resolution

- Character/Setting
- Kick-off
- Character’s feelings
- Plan of action
- Actions/Attempts
- Consequence: Does the character get what he/she planned?
- Resolution -- back to feelings

©Story Grammar Marker (SGM)
Braidy Moreau, 2002
<table>
<thead>
<tr>
<th>Steps in the Gradual Release of Responsibility Framework</th>
<th>Description: Teacher Actions</th>
<th>Student Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td></td>
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</tr>
<tr>
<td>1. Model</td>
<td><strong>Metacognitive think aloud</strong> with a focus on picture-derived inferences and identifying story grammar components. 1. Teacher displays a picture story sequence for a narrative script e.g. building a birdhouse, birthday party etc.</td>
<td>Students respond to probing questions as teacher notices information provided in the illustrations and points out what is missing and needs to be inferred.</td>
</tr>
<tr>
<td>2. Guided Practice</td>
<td>Refers to story grammar icon (Braidy) and names and describe the character with elaborated noun phrases.</td>
<td>Students each take a turn with the Braidy story grammar icons to introduce the character and the setting.</td>
</tr>
<tr>
<td>Steps in the Gradual Release of Responsibility Framework</td>
<td>Description: Teacher Actions</td>
<td>Student Actions</td>
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<tr>
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<tr>
<td>3. Guided Practice</td>
<td>3. Notices information provided in the illustration that can help to infer the setting. e.g., The girl is wearing a short-sleeved shirt. There are leaves on the tree. Instructor scaffolds using language cue words (but, so, because) when incomplete information is given or the sentence is simple e.g. Student says. “The girl is making something.” Teacher models: Rose is making a birdhouse with wood.</td>
<td>Each student practices retelling the character and setting along with the first event, the next event and so on. Students practice causal statements modeled by teacher and support by icons and language cue words. Student says: Rose is building a birdhouse. Teacher: Holds up “because “ language cue card. Student: Rose is painting the birdhouse because the bird needs someplace to live.</td>
</tr>
<tr>
<td>Steps in the Gradual Release of Responsibility Framework</td>
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<td>Student Actions</td>
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<td>----------------------------------------------------------</td>
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<tr>
<td>Guided Practice Continued</td>
<td>4. Connects to the next picture in the sequence and explain what the character did first, next, then (holds up language cue words). 5. Revisits each illustration and explain the reason for an action or feeling. Elaborate using <em>because</em> and <em>so</em> language cue cards. 6. Talk about how the character felt in each part of the story. Use <em>because</em> as a language cue word.</td>
<td>Students repeat what teacher models. Students access language cue cards. Students fill in missing information when instructor pauses and may hand over icons. Each student has turn to state how the character felt and explain why using the language cue card, <em>because</em>.</td>
</tr>
<tr>
<td>Instructor repeats scaffolds as necessary with language cue cards and/or explicit modeling.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steps in the Gradual Release of Responsibility Framework</td>
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<td>----------------------------------------------------------</td>
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</tr>
<tr>
<td>Day 2 &lt;br&gt;1. Model complete retell with icons and language cue words.</td>
<td>With picture sequence from the day before out on the table along with icons and language cue words, instructor uses the icons and language cue words to retell the whole story generated the day before, with some pauses to engage students in filling in information.</td>
<td>Students each have a part of the story identified by the story icon and sit in the order they will present. On cue they say their part of the story.</td>
</tr>
<tr>
<td>2. Guided Practice Retell with icons</td>
<td>Students are given icons and are seated in order of the story components. Language cue words are placed on the table. Instructor gives feedback and students retell with more elaboration e.g. elaborated noun phrase. Ensures that all parts of the story are retold.</td>
<td>Students use story grammar icons to retell the story. They are encouraged to help each other.</td>
</tr>
<tr>
<td>3. Collaborative Learning</td>
<td>Places, all of the icons on the table and tells students to continue their practice. Some feedback is provided.</td>
<td>Students take turns retelling the story.</td>
</tr>
<tr>
<td>4. Independent Practice</td>
<td>Story Grammar Journals are passed out. The instructor pulls aside one student at a time to retell the story without icons while the others practice as a group. Instructor scores the retell with a story grammar narrative rubric and notes the literate language used. Then instructor gives the student feedback on what part was done well, and what part to improve on.</td>
<td>Students practice collaboratively to retell the story.</td>
</tr>
<tr>
<td></td>
<td>Students are called one by one to retell the story generated together from the story picture sequence.</td>
<td>Students write and illustrate in their story grammar journals an entry about character or setting.</td>
</tr>
</tbody>
</table>
Three ways we can analyze/develop characters

**Appearance**

- What the author tells you is important?

**Feelings**

- Evidence
- What character says
- What character does/actions
- What character likes/dislikes
- Character’s goal or motivation

- Track changes in feelings
One day a girl named Rose decided to make a bird house so the birds would have a shelter. She got a hammer, wood and nails.
TEMPORAL COHESIVE TIES

To move to an action sequence students need to use temporal connectives.

- first
- then/next
- finally
COHESIVE TIES

Students need access to words that bring together elements and clarify relationships: but, so, because
“Rose likes to build things so she decided to construct a bird house”

- remembered
- decided
- thought
Sam has a cat.

Cat has a hat.
INDEX OF NARRATIVE COMPLEXITY SCORING RUBRIC (GILLAM, 2010)

<table>
<thead>
<tr>
<th>Narrative Element</th>
<th>0 POINTS</th>
<th>1 POINT</th>
<th>2 POINTS</th>
<th>3 POINTS</th>
</tr>
</thead>
</table>
| **Character**     | **No main character is included, or only ambiguous pronouns are used.**
| Examples          | a) They were walking.
|                   | b) He was walking. |
| Includes at least one main character with non-specific labels only.
| Note: Only code each character one time. |
| Includes one main character with a specific name for the character. |
| Examples          | a) “Once there was a boy.”
|                   | b) “The boy was walking.” |
|                   | **Includes more than one main character with specific names.**
| Examples          | a) “Once there was a boy named Charles and a girl named Mary.” |

| **Setting**       | **No reference to a specific or general place.**
| Examples          | a) “The boy and the girl were walking.” |
| Includes reference to a general place or time. |
| Examples          | a) “The boy and the girl were outside.”
|                   | b) It was daytime.
|                   | c) One day, they went to the park |
| One or more references to specific places or times. |
| Examples          | a) “Once there was a boy and a girl walking in Central Park.”
<p>|                   | b) They were walking at 10:00 at night.” |</p>
<table>
<thead>
<tr>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>first her sawed a bark sounded like a dog and that dog was eating garbage and she was bad dog pour water take a bath bubble bath and make it sure it's all sparkly and clean then mom told her walk after we got muddy and they was taking another bath bubble bath and he still sparkly clean and went inside the house and took a nap and woke up he eats garbage he got messy he bubble bath shiny and clean</td>
<td>Flower looked outside and she saw her dog eating trash. So she took her dog to her backyard and she got her tub ready, her pool ready for water and soap and so she put the dog in the bath but the dog heard, &quot;Meow, Meow&quot; and that was cat the cat like (meow sound) and scared away the dog scared the cat up to the tree So Flower decided to get the dog in he bath say, &quot;Get inside the bath&quot; and Flower decided to get the ladder and climbed up the tree to get the cat at the end the dog out the bath and the cat and them two been best friends so she decided to let them sleep at the different rooms</td>
</tr>
<tr>
<td>Developmental Order</td>
<td>Inference Making</td>
</tr>
<tr>
<td>---------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Concrete physical relations that occur close together</td>
</tr>
<tr>
<td>2</td>
<td>Concrete physical relations between distant events</td>
</tr>
<tr>
<td>3</td>
<td>Causal relations involving character’s goals, emotions and desires</td>
</tr>
<tr>
<td>4</td>
<td>Hierarchical and thematic relations between clusters of events</td>
</tr>
<tr>
<td>5</td>
<td>Translation of story theme into moral or lesson</td>
</tr>
</tbody>
</table>
| Concrete physical relation that occurs close together | Objects are pictured, in the same picture frame or adjacent frames, but the relationship is not pictured. | *First her saw a bark sounded like dog.  
*And that dog was eating garbage |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete physical relation that occurs between distant points</td>
<td>A relationship identified between picture frames that are more than one frame apart.</td>
<td>*And mom told her walk after we got muddy.</td>
</tr>
<tr>
<td>Causal relations involving characters’ goals, emotions &amp; desires</td>
<td>States reason for feelings of character, or actions of character (e.g., decide or refers to character’s thoughts e.g. tell what character said)</td>
<td></td>
</tr>
<tr>
<td>Concrete physical relation that occurs close together</td>
<td>Objects are pictured, in the same picture frame or adjacent frames, but the relationship is not pictured</td>
<td><em>but the dog heard meow, meow. The dog scared the cat up the tree and climbed up the tree to get the cat.</em></td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>-------------------------------------------------</td>
<td>------------------------------------------------------------------</td>
</tr>
<tr>
<td>Concrete physical relation that occurs between distant points</td>
<td>A relationship identified between picture frames that are more than one frame apart.</td>
<td><em>Flower looked outside and saw her dog eating trash. So she took her dog to her backyard and got her tub ready. Her pool ready for water and soap and so she put the dog in the bath. At the end the dog out of the bath.</em></td>
</tr>
</tbody>
</table>
| Causal relations involving characters’ goals, emotions & desires | States reason for feelings of character, or actions of character e.g., decide or refers to character’s thoughts e.g. tell what character said. | *So Flower decided to get the dog in the bath.*  
*Say, “Get inside the bath.”*  
*And Flower decided to get the ladder.*  
*And the cat and them been two best friends.* |
RESULTS REVISITED
Figure 3. Effect Size Comparisons on the Narrative Language Measures at Post Test

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<tr>
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</tbody>
</table>
Figure 4. Index of Narrative Complexity (INC)

- **Group Mean Scores**
- **Pre**, **Mid**, **Post**

- **Control**
- **Narrative Intervention**
Figure 5. Comparison of Macrostructure and Microstructure Growth on INC

- **Group Means for Raw Scores**

- **Axes**:
  - Y-axis: Group Means for Raw Scores
  - X-axis: Pre, Mid, Post

- **Legends**:
  - Control Macro
  - Intervention Macro
  - Control Micro
  - Intervention Micro

The graph illustrates the growth of macro and micro structures over time for two groups: Control and Intervention. The Intervention group shows a more significant increase in Group Means for Raw Scores compared to the Control group, particularly noticeable in the Post assessment.
PICTURE-DERIVED INFERENCE PROTOCOL

[Bar chart showing PDI Means across Pre, Post, and Mean Change for Control and Intervention groups]
CONCLUSIONS

- Demonstrated efficacy of an RTI model for improving oral language skills.

- Significant changes on both macrostructure and microstructure measures; greater magnitude of growth for macrostructural features, that may be due to point range.

- Evidence of an increase in picture-derived inferences for the Narrative Intervention group.

- Evidence for generalization from picture-supported story generating and retelling tasks to retelling without pictures.
ELL students in the Narrative Intervention group performed significantly better on the TNL than ELL students in the Control group.

75% of students in the Narrative Intervention group (who were not identified as SLI during the intervention) were at or above grade level in reading measures at the end of first grade as compared with 44% of the students in the Control group.

The SLI students (3) had documented gains on all language measures. They started with lower pretest scores and had less robust
SO WHAT IS THE STORY?

- **Oral practice**, the daily time that children had during the intervention to engage in narrative discourse and practice their verbal skills was an important element in their accelerated growth in narrative skills.

- **Guided analysis** of the pictures in order to discover the story grammar components and infer missing information in order to integrate the parts for a synthesis of the whole story.

- **An icon-based** story grammar approach provides concrete support for metacognitive thinking and self-regulation as the instructor models how to think about the story grammar components, identifies and labels the components, and refers to the language cue words to convey the meaning.

- **Independent Practice**: students self-select the icons and language cue words and begin the process of self-regulation. Scaffolds are withdrawn as students demonstrate that they have internalized the components.
IMPLICATIONS FOR PRACTICE

- Weaknesses in crucial oral language abilities can and should be targeted for early intervention and can be done so in the RTI framework with explicit and systematic small group instruction.
- Inference making can be taught and progress monitored using pictures, along with story grammar & literate language for prereaders.
- The most robust advantages of the students in the narrative intervention were on the single picture scenes tasks for both oral narration and narrative comprehension and the picture-sequence task for Oral Narration. This information could reduce the amount of time for progress monitoring.
RESOURCES

- Reading comprehension strategies: Theories, interventions, and technologies by Danielle S. McNamara
- Children’s comprehension problems in oral and written language: A cognitive perspective by Kate Cain and Jane Oakhill
- Questioning the author by I. Beck & M. McKeown
- Improving reading comprehension: Research-based principles and practices by J. Carlisle and M. Rice
- Rethinking reading comprehension by A.P. Sweet and C. E. Snow


