Context-Based Intervention:
Bringing the World to the Therapy Room

Or maybe... Shaping our Therapy Room into the World

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possible “take away” messages?

• “The brain was designed to solve problems related to surviving in an unstable outdoor environment, and to do so in near constant motion.” – Dr. John Medina, *Brain Rules*  
  
  • relevancy, interest, changing situations, activity, with “control”… everyone’s *wired differently*

• Kamhi (2014) summarizes assumptions r/t widespread use:
  • difficulty → improved LT memory and transfer
  • models and goals: complexity, comparison, connectedness
What is context-based therapy?

• “Topics/issues the patient wants, needs, or can communicate about; problems the patient wants to solve” (Marshall, 2008b)
How do SLPs “direct” / structure therapy?

Clinician Directed
• The clinician determines:

Child/Client Directed
• The client determines:

- structure
- materials
- responses
- reinforcement/feedback

Adapted from Paul, (2007)
### What is the continuum of naturalness?

<table>
<thead>
<tr>
<th>Drill</th>
<th>Hybrid</th>
<th>Context-Based</th>
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<tbody>
<tr>
<td>• Clinician determines the materials and structure of the activity</td>
<td>• The clinician determines the materials and the ways they will be used</td>
<td>• The clinician determines the materials</td>
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<td>• Specific responses are expected</td>
<td>• The client produces expected and novel responses</td>
<td>• The client determines how the materials will be used and the structure of the session</td>
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<td>• The client produces the targets</td>
<td>• The clinician adapts feedback based on the client’s responses</td>
<td>• The clinician shapes and facilitates responses</td>
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<td>• The clinician provides feedback</td>
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<td>• The client produces novel utterances</td>
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<td>• The clinician provides feedback according the client responses</td>
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**Clinician Directed**

**Clinician Directed**

**Clinician Directed** **Client Directed**

**Clinician Directed** **Client Directed** **Scripting**

Adapted from Paul, (2007)
Where does “conversation” fit?

• Just about **everywhere**

• A caveat about conversation:  
  it’s decontextualized. It’s just an activity

• So the *therapy* is how we respond during the conversation.  
  • drill  
  • “hybrid”  
  • naturalistic/context-based
Who is in the natural environment?

Family Observation

• The family observes therapy sessions
  • From an observation window
  • Within the therapy room
• There is little or no input from the family nor do they participate in the therapy sessions

Family Involvement

• The family engages in the therapy activities
• The clinician teaches the family to differentiate correct vs. incorrect responses
• The family learns strategies to elicit therapy targets during daily routines
• The family learns to provide corrective feedback
Connected Speech Sampling

**Language Sample**
- MLU
- Type Token Ratio (TTR)
- Number of Words
- Number of Different Words
- Communicative effectiveness

**Speech Sample**
- Transcription
- Phonetic Inventory
- Phonemic Inventory
- Syllable Shape Analysis
- Processes- active and inactive

**Taking the Sample**
- Play-based
- Elicit various types of utterances with various types of materials

... language rich ...speech sound rich

**Analyzing the Sample**

Candidacy – which clients should we target?

• Almost any disorder
  • A goal for context based treatment: “to improve listening comprehension and information exchange in authentic communicative contexts” (Marshall, 2008a)
    • Perhaps less so for motor-based issues where neuromuscular deficits and/or the need for direct teaching drive the treatment. Refer to principles of neuroplasticity and motor learning
  • A lot of kids may need a greater number of relevant models compared to what is typically available (Camarata, 1993).

• Setting?
Stumbling blocks

• Some inherent challenges

• What about your own work environment?
Candidacy – some more thoughts

• Disorders (and goals) related to language, cognition, interaction...
  • Paul, 2007
  • EBSRs... RHD (Lehman-Blake, et al, 2013), dementia (Hopper, et al, 2013)
  • Disorder specific research (Wambaugh, et al, 2013; Marshall 2008 a/b)
  • ASHA Portal and SLP resources

• Settings – some easier than others

• Group vs. individual therapy

• Age not likely a factor
Candidacy – decision making

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<th>Testing/analysis findings (communication disorder, goal areas...)</th>
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One client’s experience  (Schmidt & Miller, 2014)

• **Background**
  • Literature supports the use of a natural therapy approach and family inclusion for treating phonological disorders
  • Most of the articles borrowed from language treatment approaches:
    • Whole Language Treatment Program (Hoffman, Norris, and Monjure, 1990)
    • Scaffolded-Language Intervention (Bellon-Harn, Credeur-Pampolina, & LeBoeuf, 2013)
    • Communication-Centered Intervention (Hart & Gonzalez, 2010)

• All of the above approaches used naturalistic exchanges and embedded corrective feedback
A case study  (Schmidt & Miller 2014)

• **Purpose**
  • Measure treatment outcomes
    • Speech sound production change
      • Measured by speech sample analysis, daily SOAP notes, and informal observation
  • Caregiver reports of speech sound change

• **Caregiver inclusion**
  • Measured by consistency of acoustically highlighting therapy targets and implementation of corrective feedback

• **Methods**
  • Case study: Single-subject research design
  • Subject: 3 yo with severe phonological disorder
  • Periodic comparison of measures

• **Treatment:**
  • 2x /week for 45 minutes for 1 academic year
  • targets: final consonants, fricatives, velars
  • 1 target each session for 2 consecutive sessions
  • Caregiver observed for 30 minutes and was participated for last 15 minutes of each session
Treatment planning (Schmidt & Miller, 2014)

• **Goals**
  • from the GFTA-2
  • For richer “patterns” we:  
    • further analyzed GFTA-2 data  
    • took and analyzed a speech sample  
  • Developed goals based on:  
    • Developmental norms  
    • The activeness of the phonological error patterns  
    • The patterns with the most significant effect on his intelligibility  
  • Wrote goals to measure observable patterns through context-based therapy approach  
    • Example: The client will increase use of final consonants by deleting fewer than 10 final consonants during a session.
The therapy sessions (Schmidt & Miller, 2014)

Session structure / activities

✓ Dialogic book reading
✓ allow him to select rest of session activities
   - which were created around central theme for the day (derived from the book)

Example: Dig and place-stimuli: farm theme and fricative target:

• farm
• strawberries
• sheep
• hay

✓ Family inclusion

Therapeutic techniques

• responses and corrective feedback within sessions

• Child “ I pound a trawberry”
• Clinician “ You Found a trawberry or a Sstrawberry?”
• Child “trawberry”
• Clinician “ Blow out the air when you say Sstrawberry. Where does the Sstrawberry go?”
• Child “In the garden”
• Clinician “Yes what else can you Ffind Ffor the Ffarm?”
...session “wrap” (Schmidt & Miller, 2014)

- Caregiver joins the session

- client selected the activity
  - Feed the horse

- Example of the inclusion of caregiver:
  - He told the caregiver what to feed the horse
  - She asked him what she should feed the horse
  - She named the item she fed the horse while acoustically highlighting the fricatives

- Example of feedback given to caregiver:
  - “Good job highlighting targets”
  - Modeled use of corrective feedback
  - “When he says pish for fish, tell him to blow out the air when he says fish”
  - “At home, you can highlight targets throughout the day, and you can pick times when you will provide feedback, such as at lunch or during play time, etc.”
Therapy results / findings (Schmidt & Miller, 2014)

Therapy Measures

• Initially, he was unintelligible to familiar and unfamiliar listeners
  • Speech sample analysis revealed:
    • Phonetic inventory: 11
    • Phonemic inventory: 9
    • Several phonological processes, typical and atypical

• At 9 months, he was somewhat unintelligible to familiar and unfamiliar listeners
  • Speech sample analysis revealed:
    • Phonetic inventory: 15
    • Phonemic Inventory: 14
    • Fewer occurrences of phonological processes

Caregiver observations

• 9/2013: “He is unintelligible to familiar and unfamiliar listeners”

• 4/2014: reported his request of “I want to watch Frozen” with all of the sounds in the sentence

• 5/2014: reported his request of “chip and dip” with exaggerated ending sounds

• 5/2014: reported a previous teacher’s comments about how well she could understand him as compared to the previous year in class
Therapy results / findings (Schmidt & Miller, 2014)

• Caregiver Inclusion

• Increased amount of acoustic highlighting, per caregiver report and clinical observation
Findings: use of final consonants

Final Consonant Deletion
Age of suppression: 2;6-3;0

<table>
<thead>
<tr>
<th>Sample</th>
<th>Age</th>
<th>Number of Occurrences</th>
<th>Number of Phonemes</th>
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</thead>
<tbody>
<tr>
<td>Sample 1</td>
<td>9/2013</td>
<td>25</td>
<td>m, t, d, g, l, r</td>
</tr>
<tr>
<td>Sample 2</td>
<td>11/2013</td>
<td>10</td>
<td>m, t, d, g, l, r</td>
</tr>
<tr>
<td>Sample 3</td>
<td>4/2014</td>
<td>5</td>
<td>d, k, θ</td>
</tr>
<tr>
<td>Sample 4</td>
<td>5/2014</td>
<td>1</td>
<td>d, k, θ</td>
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</table>
Findings: use of fricatives

Stopping of Fricatives
Age of suppression: 2;6-4;6

Sample 1 9/2013 Age: 3;3
Sample 2 11/2013 Age: 3;5
Sample 3 4/2014 Age: 3;10
Sample 4 5/2014 Age 3;11
Findings: use of velars

Velar Fronting
Age of suppression: 2;6-3;0

- n, k, g
- s, η
- k, g, η
- k, g

Sample 1 9/2013 Age: 3;3
Sample 2 11/2013 Age: 3;5
Sample 3 4/2014 Age: 3;10
Sample 4 5/2014 Age: 3;11
Discussion of study findings  
(Schmidt & Miller, 2014)

- increased use of final consonants and larger repertoire offered more opportunities for...
  - Stopping
  - Fronting
  - Sound substitutions

- acoustic highlighting & feedback for velars less “overt” than for the other targets → less “overt” speech sounds may benefit from more direct teaching than naturalistic exchanges alone

- velar fronting addressed directly for a shorter time frame → perhaps insufficient time for “percolation”
Challenges

• *Time demands:*
  • planning/scripting naturalistic opportunities
  • planning/scripting clinical feedback in a naturalistic manner
  • making materials for context-based activities
  • speech sampling and phonological analysis

• *Clinical implementation/flexibility/multi-tasking:*
  • manipulating various stimuli within contextual environment
  • clinically following child’s lead within the activity
  • providing corrective feedback in “play”
  • tracking data

• Possible solutions?
Candidacy, revisited

• Items requiring direct teaching, like the velars, may respond less well to a solely context-based approach (Schmidt & Miller, 2014)

• “situational knowledge may be a powerful tool in facilitating language, and additional, albeit minimal constraints, may be of benefit in promoting generalizable language.” (Wambaugh, et al, 2013)

• What are the therapy targets?
Candidacy – decision making

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Treatment planning- activities

Some activities lend themselves to context-based therapy better than others:

• Farm theme
  - Play with animals and barn
  - Feed the animals
  - Gather eggs (or other supplies)
  - Prepare a “meal” from the farm
  - Plant a garden

• Fall theme
  - Rake leaves
  - Leaf crafts
  - Pick apples or pumpkins

• Food theme
  - Go to the store
  - Order at a restaurant
  - Dress the cook
  - Make a “meal”
  - Eat a “meal”

(Strong, 1983)
Treatment planning - elicitation and feedback

Steps to creating a script

• Determine the goal(s)
• Determine the activity(ies)
• Determine the stimuli within each activity for each goal
• Plan the elicitation techniques
• Predict potential client responses
• Establish corrective feedback
## Scripting example

<table>
<thead>
<tr>
<th>Steps of the Activity</th>
<th>Elicitation Techniques</th>
<th>Client Responses</th>
<th>Feedback</th>
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</table>
| -Final consonant deletion  
-Read a book  
-Any word in the book with a FC | -”What is this?” (point to picture with FC)  
-Cloze (fill-in-the-blank prompt with FC word) | -Do (target- dog) | -”Say the whole word dog”  
-”That’s right, it is a dog” |
| -Fricatives  
-Feed the Frog  
-Any fricative sound-example: fly, fish, sheep, snake, zebra, etc. | -”The frog is hungry... what should we do?”  
-”Let’s feed the frog. What do you want to feed him first?” | -”peed him” (target- feed him)  
-”pie” (target- fly) | -”Blow out the air when you say “feed him”  
-”A pie or a fly?” |
Candidacy – decision making

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Brainstorming

• How do we really make it happen?
Thanks for talking with us today!

• Other thoughts, questions, etc?
References


For motor based therapies

- et al…