Speech Pathology professional development seminar four

Language sampling with children and adolescents: A research to practice update

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Overview

- Introduction
- Elicitation contexts & procedures
- Language sample analysis (LSA), incl. case study
- Concluding thoughts

Introduction

Why do we (SLPs) collect samples of spontaneous language?

- Confirm / complement standardised test results
- Provide descriptive detail for intervention
- Progress monitoring

Survey results

Do you collect spontaneous language samples?
- 91% collect spontaneous language samples for screening, diagnosis, remediation, and post-intervention.

Survey results – cont.

How do you collect language samples?
- 87% use informal procedures
- 62% use the Bus Story (Renfrew, 1995) or the Test of Narrative Language (Gillam & Pearson, 2004)
- 15% use a screening package
- 33% use an existing protocol

Survey results cont.

Recording, transcribing, and analysis
- 56% record the samples
- 49% transcribe in real-time
- Clinicians who record the sample are more likely to transcribe
- Samples are generally short (~23 utterances)

Evidence suggests:
No reliability data available for real-time transcription
At least 50 utterances are needed for a full description of the child’s linguistic performance
Elicitation contexts & procedures

Issues to consider:
» Age & cognitive ability
» Purpose
» Curriculum
» Cultural considerations
» Available instruments & procedures

Elicitation contexts & age

<table>
<thead>
<tr>
<th>Context</th>
<th>Conditions</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conversation</td>
<td>Free Play</td>
<td>3:0 (MLU &gt; 3:0)</td>
</tr>
<tr>
<td></td>
<td>Interview</td>
<td>4:6</td>
</tr>
<tr>
<td>Narration</td>
<td>Personal narratives</td>
<td>3:6 (embedded)</td>
</tr>
<tr>
<td></td>
<td>4:6 (using picture prompts)</td>
<td></td>
</tr>
<tr>
<td>Fictional story re-telling</td>
<td>4:4</td>
<td></td>
</tr>
<tr>
<td>Fictional story generation</td>
<td>3:11</td>
<td></td>
</tr>
<tr>
<td>Expository</td>
<td>Generation</td>
<td>6:0</td>
</tr>
<tr>
<td></td>
<td>Retelling</td>
<td>6:0</td>
</tr>
<tr>
<td>Persuasion</td>
<td>Generation</td>
<td>7:0</td>
</tr>
</tbody>
</table>

Source: Hughes et al., 1997; Westerveld, 2011

Conversation vs. Narration

- Speaker and listener roles differ.
- Different purpose
- Pragmatics
- Planning
- Children produce longer and more complex sentences in narration.
- Close association between narrative skills and other academic skills

N = 250
4:6 – 7:6

**Conversation**

**Why collect a sample in conversation?**

<table>
<thead>
<tr>
<th>QLD samples</th>
<th>Prep</th>
<th>Year 1</th>
<th>Year 2</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conversation</td>
<td>33</td>
<td>30</td>
<td>33</td>
<td>96</td>
</tr>
</tbody>
</table>

In the Foundation year, students communicate with peers, teachers, known adults, and students from other classes.

- Learning to ask relevant questions and to express requests and opinions in ways that suit different contexts (ACELA 1428)
- Understand the use of vocabulary in familiar contexts related to everyday experiences, personal interests and topics taught at school (ACELA 1437)

**Example**

- Josie is 5:9 and attends prep.
- Teachers have expressed concerns about her speech and language skills.
- WNL on the CELF-P2, LSA to confirm results
- Provide further info
- The SLP elicited a sample in conversation, using an interview procedure (Westerveld & Gillon Language Sampling Protocol, 2011)

**Excerpt**

- Yeah.
- What do you like to do when you're not in school?
- I like to watch TV at my house. (Because can because three, watch TV, sit, Aunty sit)
- And there's lots of music and cartoons.
- Cool.
- Awesome cartoons.
- I like what [after that] I don't like.
- Cheese with [after that] I do like.
- How.
- Do you have any brothers or sisters?
- Yeah.
- I only have one sister.
- Ok.
- One of the girls is called Chloe.
- [And I don't and I think] I always forget how to spell her name.
- Hmm.
- Chloe is a tricky name to spell.
- Yeah.
- There's actually two Chloe's.
Example

Compared to her same-grade peers – all measures WNL – except for mazing behaviour and rate ++

Oral narratives – links to the curriculum

Foundation year

• Discuss the features of plot, character, and setting in different types of literature and explore some features of characters in different texts (ACELT1584)

Year 1

• Understand that different types of texts have identifiable text structures and language features that help the text serve its purpose (ACELA1463)

• Discuss the characters and settings of different texts and explore how language is used to present these features in different ways (ACELT1591)

Year 2

• Use metalanguage to describe the effects of ideas, text structures and language features of literary texts.

• Create literary texts that explore students’ own experiences and imagining (i.e., change aspects of stories, such as time or setting, adding characters etc.)

• Create literary texts by developing storylines, characters and settings (i.e., collaboratively plan etc. … To convey setting, characters, and points of drama in the plot)

And so on……
### Types of oral narratives

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Script</td>
<td>Account of what usually happens.</td>
</tr>
<tr>
<td>Personal narrative</td>
<td>Description of one particular experience.</td>
</tr>
<tr>
<td></td>
<td>Produced by children in &quot;all&quot; cultures.</td>
</tr>
<tr>
<td></td>
<td>Earliest acquired form of extended discourse</td>
</tr>
</tbody>
</table>

- [Video](http://youtu.be/BREsIvJLi0I)

### Types of oral narratives

<table>
<thead>
<tr>
<th>Fictional story generation</th>
<th>Fictional story retelling</th>
</tr>
</thead>
<tbody>
<tr>
<td>More spontaneous.</td>
<td>May be affected by comprehension / memory skills.</td>
</tr>
<tr>
<td>More difficult for children.</td>
<td>Retold narratives are longer and easier to score.</td>
</tr>
<tr>
<td>Often confusing and difficult to analyse.</td>
<td></td>
</tr>
</tbody>
</table>

### Elicitation procedures

- Standardised – commercial tests
- "Formal", using existing protocols – norms
- Informal

The Edmonton Narrative Norms Instrument (ENNI)
Overview of options - narrative

<table>
<thead>
<tr>
<th>Test</th>
<th>Age Range</th>
<th>Narrative Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>TNL (Gillam &amp; Pearson, 2004)</td>
<td>5.0 – 11.11</td>
<td>Script, retell, generation, comprehension</td>
</tr>
<tr>
<td>ERRNI (Bishop, 2004)</td>
<td>6.0 – adult</td>
<td>Retell, comprehension</td>
</tr>
<tr>
<td>Bus Story</td>
<td>3.0 – 4.11</td>
<td>Retell</td>
</tr>
<tr>
<td>SALT-NZ</td>
<td>4.0 – 7.7</td>
<td>Retell, Personal narratives</td>
</tr>
<tr>
<td>SALT-US</td>
<td>3.0 – 6.9</td>
<td>Generation</td>
</tr>
<tr>
<td>SALT-US</td>
<td>4.4 – 12.8</td>
<td>Retell – range of books</td>
</tr>
<tr>
<td>ENNI (Schneider et al., 2005)</td>
<td>4.0 – 9.0</td>
<td>Generation, comprehension</td>
</tr>
</tbody>
</table>

Effects of task conditions

<table>
<thead>
<tr>
<th>Task</th>
<th>UJT</th>
<th>MET</th>
<th>NPR</th>
<th>%Nouns</th>
<th>WPM</th>
<th>OA</th>
<th>SC</th>
<th>P*</th>
</tr>
</thead>
<tbody>
<tr>
<td>SALT Bus or bike</td>
<td>71.9</td>
<td>72.1</td>
<td>89.2</td>
<td>86.6</td>
<td>90.0</td>
<td>90.0</td>
<td>90.0</td>
<td>90.0</td>
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<tr>
<td>PGDT SC test</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
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<td>0.05</td>
<td>0.05</td>
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<tr>
<td>PWAN you to be</td>
<td>340**</td>
<td>340**</td>
<td>256**</td>
<td>256**</td>
<td>256**</td>
<td>256**</td>
<td>256**</td>
<td>256**</td>
</tr>
</tbody>
</table>

*Group means significant at p < .05; **Group differences significant at p < .01

When comparing to a database, it is important to adhere to the elicitation protocol with regard to picture support when evaluating verbal productivity and verbal fluency.

Australia-specific ‘norms’

<table>
<thead>
<tr>
<th>Task</th>
<th>Prep</th>
<th>Year 1</th>
<th>Year 2</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal narratives</td>
<td>44</td>
<td>41</td>
<td>42</td>
<td>127</td>
</tr>
<tr>
<td>Ana gets lost</td>
<td>44</td>
<td>41</td>
<td></td>
<td>85</td>
</tr>
<tr>
<td>Frog where are you</td>
<td></td>
<td>42</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>Bus Story</td>
<td>44</td>
<td>41</td>
<td>42</td>
<td>127</td>
</tr>
</tbody>
</table>
Use of standardised tests: pros and cons

**Standardisation:** 1993/1994
573 children 3½ to 8 years
Social Class III SE England
Reliability and validity data: scarce

Use of the Bus story in Australia

**BUS Story norms** seem to over-identify children as having difficulties in the areas of semantics (info), and grammar (ASLS and MSC), particularly noticeable in the older age groups, where at least 30% of the children score below 1SD on the Info score.

Effects of geographic location

Can we safely adopt overseas norms / databases?

No differences on measures of:
- Length
- NDW
- MLU
- Quality / cohesion

But differences on measures of:
- Mazing behaviour
- Rate

Using overseas story retelling databases may be appropriate for use as a comparison for school-age clients with language impairment.
Expository
A monologue providing factual descriptions or explanations of events.

Generation tasks:
• Explain a procedure
• Provide a summary of a short descriptive film
• Discuss the issue of interpersonal conflict
• Favourite game or sport task

Retelling task:
• Curling

Expository – links to the curriculum

Foundation year
• They listen to, read and view spoken, written and multimodal texts in which the primary purpose is to entertain, as well as some texts designed to inform.

Year 1
• They listen to, read, view and interpret spoken, written and multimodal texts designed to entertain and inform.

Year 2
• They listen to, read, view and interpret spoken, written and multimodal texts in which the primary purpose is to entertain, as well as texts designed to inform and persuade.

Year 3
• Students create a range of imaginative, informative and persuasive types of texts including narratives, procedures, performances, reports, reviews, poetry and expositions.

Year 4
• Reporting on a topic in an organised manner, providing relevant facts and descriptive detail to enhance audience understanding, and beginning to refer to reliable sources to support claims.

Year 5
• Plan, rehearse and deliver presentations for defined audiences and purposes incorporating accurate and sequenced content and multimodal elements. (ACELY1700)
What's the evidence?

- Children as young as 6 years of age can produce expository discourse, using the FGS task
- Children use relatively complex sentences (CD 1.33)
- Expository retelling samples are generally shorter but syntactically more complex.
- High correlations between language measures obtained in retell and generation – potential usefulness as a quick observation measure.

What's the evidence?

- Children as young as 6 years of age can produce expository discourse, using the FGS task
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- Expository retelling samples are generally shorter but syntactically more complex.
- High correlations between language measures obtained in retell and generation – potential usefulness as a quick observation measure.

C there's four people in each team.
C and you have to try and throw the stone into the (ta*) middle of the target.
C and whatever team get/3s (a st*) the stone closest to the centre of the target get/3s a point [d] [NOM].
E mhm.
C and the captain of the team's called the skip.
C and he stand/3s on the target and say/3s where the other people (ha*) in the team have to throw the stone [d] [NOM].
E pretty impressive.
E well done.
E what would a team need to do in order to win a game of curling do you think?
E so what strategy/3s would a good player know?
C (how to) how to do (all the) all the thing/s in the game <correctly>.
E well.
E yep.
E mhm.
C and listen to their captain.
E yeah.
C and try and do their best.
C and have a (lit*) little team talk before the game.
Elicitation tasks

<table>
<thead>
<tr>
<th>Age</th>
<th>Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>SALT NZ</td>
<td>6.5 - 7.11</td>
</tr>
<tr>
<td>SALT US</td>
<td>7.0 - 7.4</td>
</tr>
<tr>
<td>Curling (Moran, 2007)</td>
<td>Resulting</td>
</tr>
</tbody>
</table>

Australia Specific

<table>
<thead>
<tr>
<th>Prep</th>
<th>Year 1</th>
<th>Year 2</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>FGS task</td>
<td>42</td>
<td>42</td>
<td>42</td>
</tr>
</tbody>
</table>

Persuasion

Excellent to assess verbal reasoning: Does the student communicate cognitive viewpoints (formal operational thought).

Persuasion – links to the curriculum

- Year 2: They listen to, read, view and interpret spoken, written and multimodal texts in which the primary purpose is to entertain, as well as texts designed to inform and persuade.
- Year 4: Language for Interaction: Understand the difference between the language of opinion and feeling and the language of factual reporting or recording. For example, differentiate between thinking words and summary verbs.
- Year 8: Understand how conventions of speech adopted by communities influence the identities of people in those communities (ACELA1541).
**Persuasion – why is it important?**

- “personal satisfaction [and] social success” (Nippold, 2007, p.305)
- Post high-school, skill at persuasion is critical for college and career readiness.
- In Australia we test children’s persuasive skills from Year 3 (?)
- Little evidence on which to base our expectations of typical performance
- Persuasive discourse in high-school students – research project currently underway (still recruiting Year 10 and Year 12 students 😊)

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**Emma, age 13**

History of SLI
- CELF 4:
  - FS: SS 7
  - RS: SS 5
  - WCT: SS 17
  - WD: SS 12
  - Core language score: 101

Verbal Reasoning:
- Can be tested using a persuasive protocol.
- Does the student communicate cognitive viewpoints (formal operational thought).
  - Organisation
  - Coherence
  - Vocabulary

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**Aims of Collaborative Research**

- Create an assessment of persuasive speaking skills that can be used to:
  - Determine eligibility of high school students for speech-language services
  - Develop a profile of a student’s strengths and weaknesses in writing IEP goals
  - Monitor those IEP goals

Collaborators:
- Dr John Heilmann, University of Wisconsin - Milwaukee, WI
- Ann Nockerts, Salt Software
- Prof Jon Miller, Salt Software
- Karen Andriacchi, Salt Software
- Tom Makone, Wisconsin schools district
- Dr Marleen Westerveld, Griffith University, Australia
SLP referral: Lochy

Age 5;0

No significant medical history. Hearing WNL.

Communication development seemed fine until about 2 years of age. Lochy was assessed at age 5;0 for SLI verification purposes.

<table>
<thead>
<tr>
<th>INDEX</th>
<th>Standard Score</th>
<th>Range (90% CI)</th>
<th>Percentile Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Language</td>
<td>73</td>
<td>69 to 77</td>
<td>4</td>
</tr>
<tr>
<td>Receptive Language</td>
<td>85</td>
<td>81 to 95</td>
<td>21</td>
</tr>
<tr>
<td>Expressive Language</td>
<td>74</td>
<td>71 to 79</td>
<td>4</td>
</tr>
<tr>
<td>Language Content</td>
<td>81</td>
<td>75 to 87</td>
<td>10</td>
</tr>
<tr>
<td>Language Structure</td>
<td>77</td>
<td>72 to 82</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SUBJECT</th>
<th>Raw Score</th>
<th>Scaled Score</th>
<th>Range (90% CI)</th>
<th>Percentile Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concepts and Following Directions</td>
<td>6</td>
<td>5</td>
<td>4 to 6</td>
<td>5</td>
</tr>
<tr>
<td>Word Structure</td>
<td>9</td>
<td>6</td>
<td>4 to 8</td>
<td>9</td>
</tr>
<tr>
<td>Recalling Sentences</td>
<td>17</td>
<td>7</td>
<td>6 to 8</td>
<td>16</td>
</tr>
<tr>
<td>Formulated Sentences</td>
<td>0</td>
<td>4</td>
<td>3 to 5</td>
<td>2</td>
</tr>
<tr>
<td>Word Classes Receptive</td>
<td>17</td>
<td>12</td>
<td>10 to 14</td>
<td>75</td>
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<tr>
<td>Word Classes Expressive</td>
<td>7</td>
<td>8</td>
<td>5 to 9</td>
<td>25</td>
</tr>
<tr>
<td>Sentence Structure</td>
<td>14</td>
<td>8</td>
<td>6 to 10</td>
<td>26</td>
</tr>
<tr>
<td>Expressive Vocabulary</td>
<td>4</td>
<td>5</td>
<td>3 to 7</td>
<td>5</td>
</tr>
<tr>
<td>Number Repetition Total</td>
<td>4</td>
<td>5</td>
<td>3 to 7</td>
<td>5</td>
</tr>
<tr>
<td>Familiar Sequences</td>
<td>5</td>
<td>8</td>
<td>6 to 10</td>
<td>26</td>
</tr>
</tbody>
</table>

Notably, the only output levels exceeding normative levels are in the receptive language scores. His strengths are in areas that involve concrete reality, and receptive language scores. Although his expressive language scores, he continues to demonstrate similar difficulties. Assessment for Programmed prior his school, long-term program language skills are still “not adequate for him to independently function in classroom environment.”
Observational rating scale

18. Has trouble staying on the subject when talking.
19. Has trouble getting to the point when talking.
20. Has trouble putting events in the right order when telling stories or talking about things that happened.
21. Uses poor grammar when talking.
22. Has trouble using complete sentences when talking.
23. Talks in short, choppy sentences.
24. Has trouble explaining an answer or providing details when talking.

Speaking

<table>
<thead>
<tr>
<th>Task/Response</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>5</th>
</tr>
</thead>
</table>
25. Has trouble having a conversation with someone.
26. Has trouble talking with a group of people.
27. Has trouble saying something, not being able to get someone's attention.
28. Gets upset when people don't understand.

Oral Narrative Language ability

» Important predictor of future academic performance
» Links with reading comprehension performance
» Daily exposure to narratives during the early school years – including personal narratives

• Provide a simple, correctly sequenced retelling of narrative texts (p. 25)
• Bringing vocabulary from personal experiences, relating this to new experiences and building a vocabulary for thinking and talking about school topics

Australian Curriculum Assessment and Reporting Authority (2012)

Personal narratives

Story retell

Lochy Speech Sample.m4v
Assessment Results
Compared to children his age, LB shows:

- Significant difficulties/weaknesses in syntax and morphology (low MLU, high number of omitted words, and high number of errors at word level. Errors mainly consist of verb errors (see pdf printout). LB also shows a high number of omitted words (see printout) - examples include articles, copula, determiners.
- Poor expressive vocabulary - as shown by the low number of different words. LB uses fewer than expected conjunctions and personal pronouns (see printout). LB uses 'and' and 'then'. At his age, we may expect him to use because and but (see printout which shows 66 and 68% of children his age use those conjunctions)
- Low intelligibility

LSA findings – Ana gets lost


Review of verification


"I'm delighted to inform you that our appeal for his review of verification was successful and he has now been verified SLI"
Other issues

- Bilingual children
- Progress monitoring
- What to do in the absence of ‘norms’
- Different populations - Down syndrome, ASD

Bilingual Populations


Progress monitoring

(Heilmann & Westerveld, 2013)
Other populations

LSA should be the cornerstone of clinical assessment

We must aim to gather more systematic information about the language of our clients.

Small-scale studies will be important in documenting language skills of our clients with language impairment, including bilingual clients.

Practitioner input is vital

Concluding thoughts

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Practitioner input is vital

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Add note to contacts.