Best practice in phonological awareness intervention for children with speech disorder

Gail Gillon, PhD and Brigid McNeill, PhD
College of Education
University of Canterbury
Disclosure

The authors have no financial relationship with any content or material presented in this workshop.

Intervention materials referred to during the workshop that have been used in Gillon et al intervention research can be freely downloaded for teaching or future research purposes

www.education.canterbury.ac.nz
www.education.canterbury.ac.nz/people/gillon/resources.shtml

ASHA Short Course presentation, Nov, 2013
Introduction:
- Global context of USA reading achievement
- Literacy challenges

Effective intervention practices: Phonological awareness
- Workshop activity - integrated PA activity
- Class based intervention (coaching/mentoring model)
- Workshop activity working with teachers

Culturally responsive evidenced based practices
- Discussion
International Context

2011 Progress in International Reading Literacy Study (PIRLS):
• Focus on reading comprehension and home and school literacy environments
• 45 countries assessed 4\textsuperscript{th}- 5\textsuperscript{th} grade children and administered parental and school principal questionnaires

• Average age of USA children = 10.2 years
• 12,726 US children assessed, 370 schools
• Children with disability or language barriers excluded (6.5%)
International Comparisons (45 countries)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Mean Score</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hong Kong</td>
<td>571</td>
<td>61</td>
</tr>
<tr>
<td>2</td>
<td>Russian Federation</td>
<td>568</td>
<td>66</td>
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<td>3</td>
<td>Finland</td>
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<td>64</td>
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<td>4</td>
<td>Singapore</td>
<td>567</td>
<td>80</td>
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<tr>
<td>5</td>
<td>Northern Ireland</td>
<td>558</td>
<td>76</td>
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<td>6</td>
<td>United States</td>
<td>556</td>
<td>73</td>
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<td>7</td>
<td>Denmark</td>
<td>554</td>
<td>64</td>
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<td>8</td>
<td>Croatia</td>
<td>553</td>
<td>60</td>
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<td>9</td>
<td>Chinese Taipei</td>
<td>553</td>
<td>67</td>
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<td>10</td>
<td>Ireland</td>
<td>552</td>
<td>75</td>
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<tr>
<td>11</td>
<td>England</td>
<td>552</td>
<td>82</td>
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<td>12</td>
<td>Canada</td>
<td>548</td>
<td>69</td>
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<td>13</td>
<td>Netherlands</td>
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<td>14</td>
<td>Czech Republic</td>
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<td>61</td>
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<td>15</td>
<td>Sweden</td>
<td>542</td>
<td>65</td>
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<td>16</td>
<td>Italy</td>
<td>541</td>
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<td>17</td>
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<td>Slovak Republic</td>
<td>535</td>
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<td>22</td>
<td>Bulgaria</td>
<td>532</td>
<td>82</td>
</tr>
<tr>
<td>23</td>
<td>New Zealand</td>
<td>531</td>
<td>88</td>
</tr>
</tbody>
</table>

Mean Score (SD)

USA has continued to improve its reading achievement over time (2001, 2006, 2011)
Gender difference

Boys continue to achieve lower scores on average compared to girls.

Internationally, there has been little reduction in the reading gender achievement gap over the last decade.
USA Reading comprehension trends by gender

![Graph showing average scaled reading score by gender from 2001 to 2011. Boys' scores remain relatively stable, while girls' scores show an increase.]
USA average achievement by socioeconomic school composition

Average reading comp. scaled score

High SES

Mid SES

Low SES

School composition by student economic background
### USA compared to other countries

<table>
<thead>
<tr>
<th>Country</th>
<th>High SES</th>
<th>Low SES</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>NZ</td>
<td>560</td>
<td>489</td>
<td>71</td>
</tr>
<tr>
<td>Australia</td>
<td>556</td>
<td>500</td>
<td>56</td>
</tr>
<tr>
<td>England</td>
<td>568</td>
<td>527</td>
<td>41</td>
</tr>
<tr>
<td>Canada</td>
<td>557</td>
<td>533</td>
<td>24</td>
</tr>
<tr>
<td>Finland</td>
<td>576</td>
<td>541</td>
<td>35</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>586</td>
<td>568</td>
<td>12</td>
</tr>
<tr>
<td><strong>USA</strong></td>
<td><strong>591</strong></td>
<td><strong>537</strong></td>
<td><strong>54</strong></td>
</tr>
</tbody>
</table>
The Literacy Challenge

Reduce inequalities between high and low performing readers

Raise literacy achievement for:
1. Children from minority and indigenous populations
2. Children from low SES areas
3. Children with disability
4. Boys
Incidence of SLI plus reading and writing difficulties

Children with S/LI  N= 294

- Reading and writing difficulties: 47%
- Writing difficulties only: 8%
- Within expected range: 45%

Retrospective study from birth- 19 years; children from Rochester Minnesota (Stoeckel et al, 2013)
Young children with speech sound disorder

- Atypical speech error patterns (e.g., Preston et al, 2013)
- Poor phonological awareness (e.g., Gillon, 2000)
- Additional language impairment (e.g., Sices et al, 2007)

Increased risk for reading and spelling difficulties
Intervention framework

Component model  (Aaron, Joshi, Gooden, & Bentum, 2008)

- **Ecological component**
  - Home, school cultural influences, parental involvement

- **Psychological component**
  - Motivation, self perception, expectations, interest

- **Cognitive component**
  - Word recognition and comprehension: e.g., phonological awareness, vocabulary, letter phonics knowledge, reading fluency

- **Word recognition and comprehension (e.g.)**
  - Phonological awareness, vocabulary, letter phonics knowledge, reading fluency
Effective classroom practices

What classroom practices are effective in facilitating young children’s learning?
Instructional approaches that have a significant positive effect on children’s learning (Hattie, 2005)

- Teacher feedback (effect size, 0.81);
- Direct instructional approaches (0.81);
- Phonological awareness (0.66);
- Early intervention (0.66);
- Peer assessment strategies (0.63);
- Self assessment strategies (0.56);
- Setting challenging goals (0.59); and
- Mastery learning approaches (0.55)

Quality professional development for teachers also has a positive influence (effect size 0.48)
Effective Teaching

- Monitor development and adapt instruction to meet individual needs.
- Expect success in all children
- Integral parental involvement
- Well supported by educators/health care workers with specialist knowledge when required.
- Strong instructional leadership

(Foorman et al 2006)
Phonological awareness is a powerful predictor of early reading success (see Gillon, 2004 for a review)

Phonological awareness
4-5 years

School Reading Achievement

[Image of a young child]
Phonological awareness in relation to phonological processing and metalinguistic awareness

(Gillon, 2004)
Effective practices

true

False
• Developing young children’s phoneme awareness knowledge will help facilitate their knowledge of letter sound relationships

Practical implications: integrated model may be most efficient: Teach letter name, letter sound and PA concurrently
“Invented spelling” strategies reinforce children’s spelling errors and have little value in advancing children’s reading and spelling development.
Invented spelling (with feedback) can help children understand the link between speech and print when reading and spelling

- Say the word drawn out: exaggerated articulation
- Encourage children to write the sounds they hear in the word (integrate phonological and orthographic cues)
- Provide scaffold individual feedback- closer approximation to correct spelling

Video example

- Teacher-aide supporting child with down syndrome to integrate phonological and orthographic knowledge during story writing.
Supported story writing

Child with Down syndrome
post PA intervention 1
Aged 6;1

I have a baby. I’m going to play with her at home

I hav a dae im goig
to plyw wif hr ta home
Independent Spelling (after 2 terms of schooling)

Participant 1
Aged 6;1

train

chips

sun

cat

dinosaur
Bilingual or multilingual speakers will be at a disadvantage in their development of phonological awareness in English

- PA skills transfer across languages
- Evidence does not suggest disadvantage. Bilingual children either do not differ from monolingual children or bilingual children may have an advantage – depends on languages being learned

Clinical idea: Use words from the children’s native or other language alongside English words in phonological awareness, reading and spelling activities.
PA and Bilingual speakers

\[
\begin{align*}
\text{Bilingual} & > \text{ or } = \text{ Monolingual} \\
& \quad \text{Phoneme segmentation blending isolation deletion tasks}
\end{align*}
\]
Language characteristics influence PA performance

English and languages with some similar characteristics (French, Italian, Spanish)

Strength of PA compared to monolingual speakers

English and Chinese
Intensive intervention to improve young children's knowledge of rhyme is likely to significantly improve their reading ability.

A 9-week programme that focused on rhyme and syllable awareness for preschool British children had little effect on improving later literacy development.

Implication: focus predominantly at the phoneme level

- Segment
- Phonemes
  - identify
  - manipulate
  - Blend
Video: Initial Phoneme Identity
• It is more effective to integrate phonological awareness activities with speech production goals for children with speech sound disorder than working on speech goals only
Integrated intervention that targets speech production, letter sound knowledge and phoneme awareness can lead to improved:

- speech articulation
- phoneme awareness
- reading and spelling development

compared to therapy that focuses only on speech production goals

Drawing young children's' attention to print and sounds in words during shared book reading can be distracting for the child and has little added benefit.

Teachers' use of print referencing techniques during shared book reading on a regular basis has superior long term benefits for children’s reading development compared to reading the story only.

**Examples**

- Draw attention to letters on page
- Make explicit link between speech and print
- Identify first letters and phonemes in words
This is the letter s. It makes the sss sound. SSS is the first sound in Spot.

Video clip

• Parent reading to young child with Down syndrome

Children with severe speech disorders (e.g., apraxia of speech) can benefit from relatively short periods of phonological awareness instruction (e.g. between 20 – 25 hours of intervention over a 3 month period)

Nine from 12 children with CAS (aged 4-7 yrs) showed significant gains in:

- phonological awareness
- speech targets
- Letter sound knowledge

following two, 6-week blocks of intervention (24 hrs total).
Integrated model for children with speech sound disorder

Phonological awareness

- Phoneme segmentation, identify, blending, matching, manipulation- use speech target words as stimulus items

Speech Goals

- Use letters and printed words (with picture cues) to prompt speech goals

Letter knowledge

- Invented spelling, using PA in writing stories

Reading Spelling

- Reading stories using print referencing

Phoneme segmentation /blending with letter blocks
Accelerating early reading success for children with speech sound disorder

Shared book reading at home with print referencing, value other languages in stories and activities.

Class instruction in PA – integrated into literacy activities.

Focus on success, scaffold feedback, Activities with high interest and active participation, value and reward effort.

Specific intervention
Integrated phonological awareness, speech, literacy

Ecological Domain

Psychological domain

Cognitive Domain
Cognitive components
Psychological components

Success
Motivation
Interest
Ecological components
Workshop activity

Refer to Handout: Casestudy
Finn Aged 7 years 6 months (Monolingual English - NZ European, Middle SES)

Confirmed diagnosis of Childhood apraxia of speech

<p>| Percent consonants correct (PCC) | 63.8% |
| Percent vowels correct (PVC)    | 94.0% |
| Prominent speech error patterns (i.e., used over 40% of occasions) | Percent usage |
| • Cluster reduction             | 46%   |
| • Velar fronting                | 72%   |
| • Palatal fronting              | 50%   |
| Inconsistency percentage        | 48%   |</p>
<table>
<thead>
<tr>
<th>Word</th>
<th>Pronunciation</th>
<th>Spelling</th>
</tr>
</thead>
<tbody>
<tr>
<td>kangaroo</td>
<td>/dænərʊ/</td>
<td>(konw)</td>
</tr>
<tr>
<td>girl</td>
<td>/dal/</td>
<td>(glli)</td>
</tr>
<tr>
<td>dinosaur</td>
<td>/daɪndərə/</td>
<td>(dosns)</td>
</tr>
<tr>
<td>teeth</td>
<td>/tɪə/</td>
<td>(tishn)</td>
</tr>
<tr>
<td>Chips</td>
<td>/dɪs/</td>
<td>(tist)</td>
</tr>
<tr>
<td>Cake</td>
<td>/deɪt/</td>
<td>(cmk)</td>
</tr>
</tbody>
</table>
Gail Gillon and Brigid McNeill (2007) An Integrated phonological awareness programme for preschool children with speech sound disorder

Free to download for research or clinical purposes

Web page: Look under phonological resources for programme activities
http://www.education.canterbury.ac.nz/people/gillon/
star

stop
star
car
Phoneme Segmentation Bingo

“sleep”
Design phonological awareness activities to facilitate correct articulation of s clusters

Target words:
- Stop
- Star
- Sleep
- Spy
- Slide
- Spin

Phoneme identify:
Find words that start with /s/

Phoneme segmentation/blend:
Use target words in segmenting and blending activities

Speech to print:
Use letter blocks or white board to spell & read target words contrast top/stop
Design phonological awareness activities to reduce velar fronting error pattern

Target words

Single syllable words

Phoneme identify /matching /sorting initial and/or final sounds

Phoneme segmentation/blending with target speech words

Speech to print

Use letter blocks or white board to spell & read target words
Phoneme identity

car
<table>
<thead>
<tr>
<th>Item</th>
<th>Pre (6;6)</th>
<th>Post (6;11)</th>
</tr>
</thead>
<tbody>
<tr>
<td>rain</td>
<td>f</td>
<td>ran</td>
</tr>
<tr>
<td>kangaroo</td>
<td>cau</td>
<td>kangwoo</td>
</tr>
<tr>
<td>girl</td>
<td>Jo</td>
<td>gol</td>
</tr>
<tr>
<td>shark</td>
<td>c</td>
<td>shak</td>
</tr>
<tr>
<td>dinosaur</td>
<td>danc</td>
<td>dinshor</td>
</tr>
<tr>
<td>teeth</td>
<td>tc</td>
<td>tef</td>
</tr>
<tr>
<td>fish</td>
<td>fohpne</td>
<td>fish</td>
</tr>
<tr>
<td>chips</td>
<td>thedhcl</td>
<td>tis</td>
</tr>
<tr>
<td>bridge</td>
<td>qanenelc</td>
<td>bish</td>
</tr>
<tr>
<td>cake</td>
<td>ddenlce</td>
<td>kak</td>
</tr>
</tbody>
</table>

*Items not directly trained in intervention*
Spelling Sensitivity System
(Apel and Masterson, 2010)

- ‘Developmental’ approach to assessing spelling
- Gives credit for representation of phonological, morphological and orthographic information
- Separate the spelling item into its elements (phonemes, affixes) and a score assigned
  - Conventional = 3 points
  - Plausible = 2 points
  - Implausible and incorrect = 1 point
  - Omitted = 0 points
Spelling Activity
Use the Spelling sensitivity system (Masterson & Apel, 2010) to score these spelling attempts

- Conventional = 3 points
- Plausible = 2 points
- Implausible and incorrect = 1 point
- Omitted = 0 points

<table>
<thead>
<tr>
<th>Target word</th>
<th>Child’s spelling</th>
<th>No. of elements in target word</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>girl</td>
<td>know</td>
<td></td>
<td></td>
</tr>
<tr>
<td>teeth</td>
<td>gllei</td>
<td></td>
<td></td>
</tr>
<tr>
<td>chips</td>
<td>tishn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cake</td>
<td>cmk</td>
<td></td>
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</table>
### Invented Spelling Task: Kyla (aged 6 years; 0 months)

<table>
<thead>
<tr>
<th>Kyla’s Response</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>mb</td>
<td>mail</td>
</tr>
<tr>
<td>sd</td>
<td>side</td>
</tr>
<tr>
<td>jk</td>
<td>junk</td>
</tr>
<tr>
<td>sh</td>
<td>chin</td>
</tr>
<tr>
<td>Js</td>
<td>dress</td>
</tr>
<tr>
<td>lp</td>
<td>lamp</td>
</tr>
<tr>
<td>sp</td>
<td>sep</td>
</tr>
<tr>
<td>Rd</td>
<td>road</td>
</tr>
<tr>
<td>Pt</td>
<td>peeked</td>
</tr>
<tr>
<td>pk</td>
<td>picking</td>
</tr>
<tr>
<td>Kyla’s Response</td>
<td>Target</td>
</tr>
<tr>
<td>----------------</td>
<td>----------------</td>
</tr>
<tr>
<td>mb (3, 0, 1)</td>
<td>mail = 3 elements</td>
</tr>
<tr>
<td>sd (3, 0, 3)</td>
<td>side = 3 elements</td>
</tr>
<tr>
<td>jk</td>
<td>junk</td>
</tr>
<tr>
<td>sh</td>
<td>chin</td>
</tr>
<tr>
<td>Js</td>
<td>dress</td>
</tr>
<tr>
<td>lp</td>
<td>lamp</td>
</tr>
<tr>
<td>sp</td>
<td>sep</td>
</tr>
<tr>
<td>Rd</td>
<td>road</td>
</tr>
<tr>
<td>Pt (3, 0, 0, 1)</td>
<td>peeked (= 4 elements)</td>
</tr>
<tr>
<td>pk</td>
<td>picking</td>
</tr>
</tbody>
</table>
Adjusting Task Difficulty

Ki- wi
Low level task

B- ir- d
Practice tasks

N- e- s - t
Challenging task
Task difficulty

Which task is harder?

A  What is the first sound in the word nest
B  What is the last sound in the word nest
C  not sure
Task difficulty

Which task is harder?

A  How many phonemes in the truck
B  How many phonemes in the word goat
C  not sure
Working together with class teachers

Karyn Carson, Gail Gillon & Therese Boustead, 2013  (Ref: LSHSS 2013)
| Sharing Knowledge | • Teachers expertise  
| • SLP expertise |
|-------------------|-------------------|
| Integrated approach | • Integrate into class language activities |
| Structured program approach | • Focus at the phoneme level |
Video clip examples
Consider what you might advise the teacher to change to integrate PA into activities
Introducing phonological awareness into the class reading programme

Karyn Carson, Gail Gillon & Therese Boustead, 2013 (Ref: LSHSS 2013)
PARTICIPANTS

• One-hundred and twenty-nine children (75 girls & 54 boys). Classes randomly divided into:
  - Group A ($n=18$, 4 with language delay)
  - Group B ($n=16$, 3 with language delay)
  - Group C ($n=95$, 21 with language delay)

• Sample Demographics:
  - Aged between 5;00 and 5;02
  - 12 Government funded schools
  - High, middle and low SES
Study Design: A school term = 10 weeks

Group A:
- Term 1: Usual
- Term 2: PA
- Term 3: Usual
- Term 4: Usual

Group B:
- Term 1: Usual
- Term 2: Usual
- Term 3: PA
- Term 4: Usual

Group C:
- Term 1: Usual
- Term 2: Usual
- Term 3: Usual
- Term 4: Usual

Study Design: A school term = 10 weeks
Assessment Measures

Computer-Based Phonological Awareness Assessment

- Rhyme Oddity
- Initial Phoneme Identity
- Final Phoneme Identity
- Phoneme Blending
- Phoneme Deletion
- Phoneme Segmentation
- Letter Knowledge

In addition....

Reading:
Burt Word Reading Test
Calder Non-Word Probes

Spelling:
Schonell Spelling Test
TOPA Non-Word Subtest
Computer Assessment

• Website
See handout
www.newzealandphonologicalearnessdatabase.com
Username Karyn password 123
(mcneill 1357)
Classroom Phonological Awareness

Framework:
• 10-weeks
• 4 x 30-minute sessions per week (total 20 hrs)
• Coaching and mentoring model: collaboration between SLT and class teacher: Initial sessions co-taught by SLT and teacher, remainder taught only by teacher

Principles:
- Targeted skills at the phoneme level
- Explicit and systematic instruction
- Frequent and intensive sessions
- Integrated with letter knowledge and written language contexts
- Professional development for teachers
Programme Content

4 X 30 minute sessions per week for 10 weeks

Week 1 rhyme
2 initial phoneme identity
3 final phoneme identity
4 & 5 phoneme blending
6 & 7 phoneme segmentation
8 & 9 manipulation with letters
10 Revise weeks 4 - 9
Adapted from The Gillon Phonological Awareness Training Programme

http://www.education.canterbury.ac.nz/people/gillon/
DVD examples

Refer to handout
Key research findings

Phonological awareness
Literacy outcomes
**Phoneme Segmentation Development**

Phoneme Segmentation Performance in the First Year at School

<table>
<thead>
<tr>
<th>Start</th>
<th>Middle</th>
<th>End</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A</td>
<td>Group B</td>
<td>Group C</td>
</tr>
</tbody>
</table>

Repeats Measures ANOVA:
\[ F(3.580, .895) = 23.996, p = .000 \]

Tamhane’s T2 Post Hoc Test:
- Groups A & B: \( p = .052 \)
- Groups A & C: \( p = .000 \)
- Groups B & C: \( p = .000 \)
Repeated Measures ANOVA:
\[ F(3.758, .940) = .971, \quad p = .420 \]

Tamhane’s T2 Post Hoc Test:
- Groups A & B: \( p = .990 \)
- Groups A & C: \( p = .322 \)
- Groups B & C: \( p = .204 \)
Word decoding ability

Repeated Measures ANOVA: 
F(3.091, .773)=16.817, \( p = .000 \)

Tamhane’s T2 Post Hoc Test: 
Groups A & B: \( p = 1.000 \); Groups A & C: \( p = .000 \); Groups B & C: \( p = .000 \)
Study Trends

Phonological Awareness, Reading, & Spelling Development

- Group A
- Group B
- Group C

Performance in PA, Reading, & Spelling

Time During the School Year

Term 1  Term 2  Term 3  Term 4
Percentage of Children At-Risk

Percentage of Children Falling Below Age-Expected Levels on the Neale Analysis of Reading Ability after One Year of Schooling

- Fluency
- Comprehension

Neale Reading Measures
Results Reading fluency

Mean Reading Fluency Performance after 1 year at school between Children Who Received and Did Not Receive Classroom PA

- SLI: Speech language impairment
- TD: Typical development

SLI Usual Literacy Program
TD Classroom Phonological awareness

SLI Speech language impairment; TD Typical development
Results Comprehension

Reading Comprehension after One Year of School.....

Mean Reading Comprehension Performance Between Children Who Received and Did Not Receive Classroom PA

Mean Raw Scores

6 Years; 9 Months

6 Years

SLI Speech language impairment; TD Typical development
### Children with LD (Group A): Language Profiles at 5 Years

<table>
<thead>
<tr>
<th>Child ID #</th>
<th>Gender</th>
<th>Ethnicity</th>
<th>Receptive Language Index</th>
<th>Expressive Language Index</th>
<th>Speech Sound Production</th>
<th>Vocabulary</th>
<th>Phonological Awareness</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>F</td>
<td>NZ</td>
<td>89</td>
<td>86</td>
<td>63%</td>
<td>90</td>
<td>&lt;7</td>
</tr>
<tr>
<td>2A</td>
<td>M</td>
<td>NZ</td>
<td>85</td>
<td>83</td>
<td>64%</td>
<td>88</td>
<td>&lt;7</td>
</tr>
<tr>
<td>3A</td>
<td>M</td>
<td>Maori</td>
<td>95</td>
<td>83</td>
<td>89%</td>
<td>93</td>
<td>&lt;7</td>
</tr>
<tr>
<td>4A</td>
<td>F</td>
<td>NZ</td>
<td>93</td>
<td>84</td>
<td>88%</td>
<td>94</td>
<td>&lt;7</td>
</tr>
</tbody>
</table>

**Receptive Language Index (CELF-P2):** A score between 85-115 is considered within normal limits

**Expressive Language Index (CELF-P2):** A score between 85-115 is considered within normal limits

**Speech Sound Production:**
- <50% = severe
- 50-65% = moderate-severe
- 65-85% = mild-moderate
- > 85% = mild

**Vocabulary (PPVT-4):** A score between 85-115 is considered within normal limits

**Phonological Awareness (PIPA: RO, IPI, LS):** A standard score between 7-13 is considered within normal limits
### Children with LD (Group B): Language Profiles at 5 Years

<table>
<thead>
<tr>
<th>Child ID #</th>
<th>Gender</th>
<th>Ethnicity</th>
<th>Receptive Language Index</th>
<th>Expressive Language Index</th>
<th>Speech Sound Production</th>
<th>Vocabulary</th>
<th>Phonological Awareness</th>
</tr>
</thead>
<tbody>
<tr>
<td>1B</td>
<td>F</td>
<td>Maori</td>
<td>93</td>
<td>89</td>
<td>79%</td>
<td>90</td>
<td>&lt;7</td>
</tr>
<tr>
<td>2B</td>
<td>M</td>
<td>NZ</td>
<td>85</td>
<td>80</td>
<td>64%</td>
<td>89</td>
<td>&lt;7</td>
</tr>
<tr>
<td>3B</td>
<td>M</td>
<td>NZ</td>
<td>94</td>
<td>83</td>
<td>70%</td>
<td>96</td>
<td>&lt;7</td>
</tr>
</tbody>
</table>

**Receptive Language Index (CELF-P2):** A score between 85-115 is considered within normal limits

**Expressive Language Index (CELF-P2):** A score between 85-115 is considered within normal limits

**Speech Sound Production:**<br> - <50% = severe<br> - 50-65% = moderate-severe<br> - 65-85% = mild-moderate<br> - > 85% = mild

**Vocabulary (PPVT-4):** A score between 85-115 is considered within normal limits

**Phonological Awareness (PIPA: RO, IPI, LS):** A standard score between 7-13 is considered within normal limits
Responsiveness to Instruction

Mean Pre and Post Instruction Scores for Children with Delayed Speech Language Development (n=7)

Phonological Awareness, Reading, & Spelling Measures
Responsiveness to Instruction

Gain Scores for Children with Typical Development and Speech Language Delay

Mean Gain Scores

Phoneme Blending  Phoneme Segmentation  Non-Word Reading  Non-Word Spelling

Typical Development  Delayed Language

Phonological Awareness, Reading, & Spelling Measures
Key Findings

• Classroom phonological awareness instruction delivered by teachers can be beneficial for literacy development.
• Percentage of at-risk students can be minimized by 6-years of age.
• A short intensive burst can result in significant and maintained benefits for reading and spelling.
• Children with spoken language difficulties can benefit from classroom PA instruction- their reading and spelling accelerated to the level of their peers with TD peers who did not receive classroom PA but they may need more assistance in transferring skills to reading and spelling activities.
Study details

See handout:
Carson, Gillon and Boustead (2013)
Karyn Carson’s thesis on line reference
Interventions

The Gillon Phonological Awareness Training Programme

http://www.education.canterbury.ac.nz/people/gillon/
Initial Phoneme Identity:

• “Here is my friend Frog. Frog starts with the /f/ sound. Joey please take a card from the magic hat. Ah you found a boat. Let’s listen to the first sound in boat. Boat starts with a /b/ sound. Do Frog and boat start with the same sound?”
If that spells shop show me sheep

Sheep, the middle sound changed
If that spells sheep show me sheet

Sheet, the last sound changed
Show me shop

shop
Video example of tracking sound changes with letter blocks- Child with CAS
Culturally Responsive Evidence Based Practice

Macfarlane, 2012 study:

- Key research questions
  1. What are the key components of *culturally responsive* special education practice?
  2. What are the key components of *evidence-based* special education practice?

Reference: Angus H Macfarlane, PhD

*Professor of Māori Research*

*University of Canterbury*

*Christchurch, NEW ZEALAND*
Evidence-Based Practice

What constitutes evidence?

- Research.
- The ‘expert’ model
  - Medical model.
- Practitioners Skills
  and experiences.
- Trial and error
  sometimes adhoc.
- Child, young person,
  whānau and families.
  The individual and the
  collective voice.
- Information needs
to be mediated.
  Experience counts.
  Patterns identified.

Evidence-Based Practice.

Macfarlane, 2013
Why is it important to be culturally competent?

“Cultural competence is the acquisition of skills so that we are better able to understand members of other cultures in order to achieve best outcomes....it is about being able to understand the people who we are going to work with, as practitioners...”

(Durie, July 2003; page 2.)

Macfarlane, 2013
Culturally Responsive practice....

- **Cultural safety**: relationship between SLP and Child-child focused
- **Cultural competency**: practitioner focused, Respecting cultural difference
- **Culturally responsive practices**: Understanding significance of cultural practices
  
  - Promotes respect for cultural diversity

Macfarlane, 2013
A BRAIDED RIVERS APPROACH
(Macfarlane et al, 2011)

Western Science Stream

Consensus on Programme Efficacy

Indigenous knowledge stream

Culturally relevant program content

Culturally relevant Evaluation

Western Science Programme

Western Science Grounded Evaluation
Early reading success:
Core to education success.
But... early reading success is just the beginning........
Contact:
Prof Gail Gillon
College of Education
University of Canterbury
gail.gillon@canterbury.ac.nz
www.education.canterbury.ac.nz
www.education.canterbury.ac.nz/people/gillon/resources.shtml

The College of Education
University of Canterbury